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THE PHILOSOPHY OF ARBORICULTURE AND LANDSCAPE GARDENING.

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(Continued from page 587.)

AND now for the labours of the arboriculturist, afterwards his enjoyments.

As in other matters, the arboriculturist in this country has many difficulties to contend with. Of these our very extensive sea-board, compared with our very limited interior, is one. Particles of sea-salt, when plentiful in the air, are most inimical to the growth of forest trees in general. Even in the finest climates, if particles of sea-salt abound in the air, they attack and kill all expanded leaves and young wood, and prevent the formation of buds. On the Bay of Naples, in the south of Italy, just as on Bressay Sound in the Shetland Isles, deciduous trees can be grown, in the first instance, only under the lee of a wall. And each row of trees, as it is farther from the sea, only rises above the one that is nearer, like the roof of a house. Evergreens, indeed, whose leaves and life are more torpid, are not so sensitive; and the Bay of Naples, where man has not interfered, is beautifully clothed with orange and lemon trees. Some plants also have the power of absolutely resisting the entrance of sea-salt into their tissues, which, accordingly, may be seen encrusting their leaves; and they suffer nothing from salt. Other trees, again, as the coconut palm, may have a truely maritime habitat, and may refuse to be productive at any very great distance from the sea. But a large sea-board, especially in a windy country like ours, is certainly a great barrier to arboriculture. And those gentlemen and foresters who have succeeded in giving old Neptune a sight of a group of goodly trees which they have raised within the reach of his breath, have a great triumph.

The great prevalence of westerly winds also in our latitudes is a great disturber of the growth and symmetry of trees, especially in those valleys which lie west and east from sea to sea.

But much, very much, has been done at once to protect, to enrich and to beautify our country by arboriculture. But happily for the earnest arboriculturist, much remains still to be done; and of his rural art, the praises stand in special need on being celebrated at the present moment, when, if consequence of the increasing demand both for corn-fields and pasture land, arboriculture runs such a risk of being neglected. It is certain, however, that in order to have the best, whether green hills meadows, or corn-fields, there must be in the landscape a fair proportion of trees.

There is another fact which, in reference to our own country, especially the southern and western counties and highlands, invests arboriculture with peculiar claims; and it is this,—to a far greater extent than ever before, the draining of all boggy lands, both low lying and upland, is being practised. Now, this is all right. It is the hand of man doing for nature in our latitudes what nature is usually able to do for herself. It is the hand of man proceeding to abolish the bogs which were the death of the primeval forest in all those localities where trees could formerly grow. But if man is to take a second leaf out of the book of nature, it is that he should plant these new drained bogs again; for that is what she does whatever she can. Of this draining, the immediate consequence has been a great improvement in the quality of the grasses growing on the lands formerly bogs, and therefore a great encouragement to the agriculturist, and especially to the sheep farmer, to continue draining till no bog remains over which he has control—an encouragement which, at the present moment, is felt intensely in consequence of the unprecedented value of sheep.

Now, there can be no doubt that this universal draining is ameliorating our climate, not perceptibly in reference to mean temperature perhaps, but certainly in reference to sunshine and fair weather. The southern and western counties—the Atlantic side of our island—is in point of rainfall approximating the eastern counties, or the Continental side. But this is what the western districts cannot stand without serious loss to the country. The amount of rain to which they have been subjected for ages has carried out of the soil the most part of the aluminous elements, in union with water (for which alumina has a remarkable affinity) into the sea, or, at all events, into the lowest troughs of the land. The soil generally is consequently light and sandy, sharp and good for growing oats and grasses, and therefore for giving green hills instead of heathery hills, but less fit for wheat and beans, and even barley. Green hills must always be the peculiar treasure of the southern and western highlands of Scotland. And, accordingly, such is the character of those hills generally as elsewhere in the corresponding localities in England. They are remarkable for their verdure. They form in this respect a striking contrast to the Grampians and the mountains of Aberdeenshire, which are very brown and purple, with rocks and stones, and heather out of flower or in flower.

But will the southern and western mountains continue green in ages to come, when the whole country is thoroughly drained, as they have continued for ages past? No; even already it begins to be commonly said of many of the most profitable sheep-walks, that they could take a shower every day, and, at all events, they could take, and would be the better for more than they get, even in districts which were wont to be very wet. Is there any method, then, whereby the rainy character of a countryside, which has departed through the draining of that country, can be restored to the extent that is needed to preserve the green hills, so that the sunshine, which has been obtained by the draining, may be preserved, while yet the former moisture may be recovered for the vegetation? Is there any method, in a word, by which a habitual or muggy raininess of climate may be transformed into sunny showeriness?

This problem, I believe, the arboriculturist is appointed to solve. By judiciously planting the crests and slopes of the mountains, and giving to nature such breadth of forest as she requires, the hills may be kept perpetually green, and the beauty of the country at the same time immensely enhanced.

Moreover, the timber will in the course of time pay its own way, and something more. Even supposing the larch should refuse its assistance in the work, the great study now bestowed upon the coniferæ in their whole treatment, and their cultivation by many (and by none more admirably than by the President of this society), opens up the hope that some substitute for the larch may be found. And if even statesmen are making provision for times supposed to be coming, when coal-fuel, as is thought, will be scarce and dear, the timber of our country will acquire new value. At present, indeed, it seems as if it were thrust aside, and were put *hors de combat* by iron. The sound of the hammer in the navy-yard now is quite different from what it used to be. No longer may we sing—

"Heart of oak are our ships."

But will it not be a pleasing conversion when our 'wooden walls" protect our firesides, not on the stormy main, but at the very glowing ingle-neuk itself. At all events, there is no reason to apprehend that the economic value of timber will ever cease. Rather let us anticipate a time when the reasonable supply of the wants of our population, both gentle and simple, and a general contentment, which alone is true wealth, will leave the general eye more open to the charms of beauty, and when people in general will drink in a far larger supply of enjoyment than they do at present, from communion with Nature and the contemplation of the Beautiful. An eye for beauty is in reality the richest inheritance. It needs no title to hold, but merely one to behold, and this is the title of every man that has an eye to see with, and a soul to feel. And a true friend among his neighbours assuredly is that man who, by his art, has succeeded in presenting permanently to the spectator who is living there, or frequently passing that way, a beautiful object where there was none before. And here let us maintain, that whatever the field of the sculptor, or the painter, or the architect, however much of the beautiful they may possibly create in their respective provinces, the field of the arboriculturist and landscape gardener is more ample than any or all of them. The finest works of the sculptor or of the architect are manifestly only accessories to the landscape gardener. These artists have to come to him to assign a place where their creation may stand, or if they venture to fix upon that place themselves, it is only by becoming landscape-gardeners themselves for the occasion.

Not that there is any incongruity in their so doing if they have strength for it. The principles of beauty, whether in the elect field of the sculptor, tho painter, the architect, or the landscape-gardener, are the same in all. And on these principles I shall here venture a few remarks, because I am not aware that they have as yet been advanced in connection with the landscape, while, even in ancient times, they have been verified in reference to architecture and sculpture, and some of the most eminent of modern sculptors have been eager to embrace them.

That in speaking of landscape-gardening I am not wandering from arboriculture, follows from this, that scarcely otherwise than by modifying the surface of the country by planting or felling, can man change the aspect, the beauty, and expression of a landscape at all. But let it not be inferred from this that his power to do so is but small. We all know to what an extent a man may change the aspect and expression of his head by beard-and-mustache gardening. Not less is the power of the landscape gardener in modifying the expression of the landscape, through the cultivation of trees and underwood.

As to the beauty of the landscape, then,—the mansion-house with its rural panorama and the cultivation of its beauty,—we cannot too soon draw a distinction between the effects of *colour* on the one hand, and of *from* on the other.

Colours are for the eye only. They can please, they can cheer, they can delight, nay, to some extent, they can awake delightful associations; or they can depress and awake mournful associations; but they do not move the soul as certain *forms* do; and they never attain the rank of picturesque or sublime. When beholding colours, also, the mind is quite differently engaged from what it is when contemplating forms. In beholding colours, the eye rests on the colour. The area, the space which the colour covers, is everything. In beholding forms, on the other hand, the eye, though secretly, is yet ever in motion, ever ranging along the contours or some line or other in the form beheld, conscious that therein the charm of the beauty lies, and very able to enjoy half beauty, though not to discover the secret of it.

Hence the development of beauty in reference to colour is easy:

(1) Colour, as to cheerfulness or gloom, must be answerable to the expression of the forms which it clothes.

(2.) Colour must be in breadths, not too small.

3.) Colour must, however, be sufficiently varied and,

4.) Every variation of colour must be harmonious, if the colour is not to interfere with the transparency and amplitude of the landscape.

The first and last of these conditions may be considered as of the same order. Scientifically considered, they are rather obscure; but happily the eye is an adequate judge. The conditions of harmony have, however, been completely ascertained in reference to music, and the same principles (though not the same rations apply to colours. But on this subject let us content ourselves with saying that, as the musical composer of a great piece, almost indeed in every page of it, in order to keep the ear awake, finds it necessary to have recourse to discords and

modulations from one key to another, so does the gardener, both in reference to the landscape and the flower-garden. Of late, indeed, the principle of discord has ruled in the flower-garden; and this it ever must do when the object is to fill the eye with a great show of colour. For the harmony of colours imparts transparency; and though harmony be necessary, if every colour is to be seen in its purity, yet when the impression of all the colours is received simultaneously, they fill the eye much more completely when they are not in harmonious juxtaposition. Suppose for instance, three varieties of pansy, one of which consists of violet and yellow (both pure and finely modelled forms), so that they just balance each other, another which is wholly violet, and the third wholly yellow, then a bed composed wholly of the first, even at a very short distance from it, would soon cease to have any effect at all. Violet and yellow are harmonic or complementary colours: when, through distance, they overlap each other, or a confused sensation of both is received by the eye, all colour tends to vanish, and mere transparency, or the ground colours beneath, tend to remain. And indeed, almost all colour, even at the distance of distinct vision, may be made to vanish if the yellow and violet be in just proportion to each other and perfectly complementary or harmonious. By spinning the flower round under the eye with sufficient rapidity it will seem merely white or grey. If, again, half the flower-bed be planted with the pansies which are wholly violet, the whole bed will bear to be looked at from some distance, and will still, in some measure, fill the eye. But let the violet colour, which is harmonious with the yellow, be removed and its place be taken by some discordant colour, such as bright red, and the bed, now half scarlet now half yellow, will send on its yellow as well as its scarlet to the eye, and fill it to a much greater distance. It is to be admitted, therefore, that though it seems at first as if there were much that is merely *bizarre* in the prevailing fashion of flower-beds, yet there is principle for it too.

But there must be no such tampering with the landscape. There, transparency and purity of tint come to be the primary object of regard; for the beauty of the landscape is that of expression, and almost everything depends upon form. Staring colours may, indeed sometimes be introduced with good effect, and serve a valuable purpose, but only to draw away the eye from defects, never to enhance beauty. One of the first demands of the soul in reference to the landscape, is for amplitude; and bright colours always give the impression of littleness. No doubt the idea of "snug," "box," &c., is not without a certain charm; but the treatment of such subjects lies outside the sphere of the landscape-gardener, except, perhaps, as a discord. That charm, in fact, is wholly of a social nature.

What, then let us ask, are the forms which impart beauty to the landscape' and which the landscape-gardener and arboriculturist has to observe and develope in order to perceive and to exalt the beauty of a domain or country side? To most persons this question will seem a very bold one, perhaps a needless one, since the general impression is that no such forms are discoverable in scientific way, but only can be seen, or rather, indeed, felt, when the beautiful objects are under the eye. It is certain, however, that the artist,—when fully entitled to the name, whether he be a musical composer, an architect, a sculptor, a painter, or a landscape gardener,—knows perfectly well that a certain expression uniformly attaches to certain modes of composition, and the development of certain forms on his part. He may not be, and, indeed, seldom is able to give an account, either to himself or to others, of the particular areas, forms or lines on which that effect depends But never doubts that the pleasing effect has its cause in the visible features which his art enables him to introduce in his compositions. He never doubts that there are principles of beauty which never fail to strike and to please good taste. Nay, he knows and he shows that he is himself in possession of these principles, though he cannot disentangle them from their accessories or say precisely what they are.

Nevertheless, they have been disentangled to a great extent, and here let us shortly bring them forward. It will at least, be a pleasing exercise of mind for those whose calling is to converse with nature, to observe nature in relation to the principles of beauty in the landscape, and in its several elements now to be unfolded, with a view to verify these principles, and, if found true, to apply them in art.

What, then let us ask, is the secret of the beauty of the landscape, and how, in any given case, may that beauty be enhanced by the landscape-gardener, the architect, or other artist? Now, to this the answer undoubtedly is, that secret of the beauty of nature is one and the same thing with the secret of nature herself. It is the same economy which makes nature to be what she is which also makes her to be beautiful, In other words, the laws of nature are the sources of beauty. And any landscape or scene which is eminently beautiful, is so beautiful just because their nature is moving according to her own laws in triumphal procession from the point of view of the beholder.

But this theory' it may be justly said, is too general to be of any practical use. It is not disputed, but it cannot be applied. Now, this criticism is just, We must, therefore, ask in detail what are those features which the free and unimpeded operation of the laws of nature tend to induce in the landscape? And, as a first step in this direction, we must ask what it is that makes any portion of country to be entitled to the name of a landscape? Now, to this the answer is, that a portion of country becomes to the observer a landscape as soon as he regards it as a unity, that is, as soon as he can look upon it or fix his gaze upon it, without his thoughts or his eye wandering to other quarters. This will not be disputed. But, in making this step, we have also made a step in the discovery of the secret of beauty. The mind can never be happy except when it is moving in harmony with the laws of its own activity, that is the laws of intelligence. The Beautiful, therefore, which makes the mind happy, must be something which draws out the mind, and invites it to move in harmony with the laws of intelligence. Now of all these laws, one of the most imperative is, that the unity of consciousness, which is the very centre and characteristic of intelligence, shall not be disturbed, but, on the contrary, shall be supplied with some unity in the outward which it may fix upon. Hence the eye, in limiting for itself, and electing a portion of country as a landscape, has already disclosed what is the first principle of the beautiful in every department. And it is this, that the beautiful object, however vast, must still possess a certain *unity*. This, in the most general point of view, is the first principle of beauty, whether in the landscape or any other beautiful composition. The object must admit of being construed as a unity. The mind must be able, which effort, to embrace it as *one*.

But the mind such an agent, that while it will not and cannot give itself to more than one object at a time, it is so intrinsically active, that it wearies almost immediately if the unity which engages it be a unity or uniformity merely. Along with unity in the object, which is the first condition called for, because it is the condition of undisturbed attention or contemplation, the mental activity calls for variety in that object, so that the mind, without losing hold of it as a unity, may be free to ramble over it and discourse freely upon it.

(To be concluded.)

A BIBLIOGRAPHY OF TEA, COFFEE, AND CACAO.

(To the Editor, "Tropical Agriculturist.")

HAMPSTEAD, LONDON.

DEAR SIR,—I herewith send you the sketch of a work which I hope soon to extend into book form, and which has occupied me off and on for the last three years. It is a "Bibliography of the Literature of Tea, Coffee, and Cacao'; and I thought it only

right that the *Tropical Agriculturist*, which has done so much (in connection with the *Observer*) to encourage and extend all that contributes to the true welfare of a country, should be the first to introduce it to the public; that is, of course, provided it be judged worthy of such introduction. The work has been one of absorbing interest, pleasure, and instruction to myself, and, I hope, will prove of some use to merchants, brokers, planters, and even consumers, of that most beneficial and least harmful of all products—Tea.

Just as "Ingê Vâ" was the putting into shape of my Tamil notes as a Sinna Durai on Scalpa Estate, so this "Bibliography" is the outcome of my own endeavours in the British Museum to read up on the subject of Tea. When I came over three years ago I vainly searched for a good list of titles and authors of books on this our leading staple. I first discovered in "Notes and Queries" a short "Bibliography of Tea, Coffee, and Sugar" (evidently by P. L. Simmonds), but it gave only about twenty books on Tea and had many mistakes. For instance, *Keen, W.*, was evidently meant for William Skeen, and a book on Coffee in Ceylon was ascribed to Lewis, G. C. (*i.e.* Sir George Cornwallis Lewis!). This ought to be Lewis, R. E. I next lighted upon Bergsma's "Catalogus auctorum qui de theâ scripserunt," and this helped me considerably, though, being antiquated and in Latin, many of the names were ludicrously mis-spelt. And besides, as nearly all scientific men in those days adopted a Latin form of their name, and as the British Museum authorities insist on giving the original form in nearly all instances, it was sometimes very difficult to trace the proper man. For instance, the real name of Bernhardus *Albinus* was B. *Weiss*, *albus* being the Latin equivalent of the German *weiss* (white). Borrichius stands for Borch; Crockisius for Crocq; Francius for Fransz; Francus for Francke; Frisius or Phrisius for Vries or Friese. Then again an author had a happy knack of appearing under a different name as quoted by different authorities. At one time he was Herrichen; at another Heinrichem; at another Henichen. Ovington changes to Overton; Joseph Serer seems to be the same man as Giuseppe Seker; our English doctor John Coakley Lettsom appears in French as simple Jean Coakley; the real name of C. Bontekoe was C. Decker van Alkmaar; he got his nickname from the *bonte koe* (spotted cow) on his father's signboard! [We have the word *bonte* in our name for flags,—bunting.] There seems some inexplicable mystery about Elisha Mills Ely and S. Millesly: they wrote exactly the same book, and Mills Ely and Millesly sound suspiciously alike; yet they appear in catalogues as totally separate individuals. And whether Philippe Sylvestre Dufour was a pseudonym for Jacob Spon or *vice versâ*, or whether they were two or more individuals, is, as far as I know, still an unsolved problem. One man I must mention: he was called by his contemporaries the "person of many initials": his proper name was Worp, but he is more often to be found under Peyma or Beintema; and his full title is Johan Ignatius Worp Beintema van Peyma. It may be interesting to mention that R. James was the doctor who first prepared the celebrated "James's Powders." Of the wretched quack who called himself *Sir* John Hill it was said "For physic and farces, his equal there scarce is, His farces are physic, his physic a farce is"; and of Motteux, who was a Frenchman, but who established an emporium in London, and who wrote vigorous English poetry, Lady Wortley Montague, in 'The Toilette,' makes mention, thus:—"Strait then I'll dress, and take my wonted range Through India shops, to Motteux's, or the Change.' I found my smattering of many European and oriental languages most useful in making out the various titles; and it will be interesting to note how many nations are represented. The greatest assistance I derived was from Dr. E. J. Waring's "Bibliotheca Therapeutica," which contains very full lists of works on all sorts of articles of the materia medica, and from which I copy some of the most perplexing Latin equivalents of the towns where the volumes were issued. These I append separately. In conclusion, I may say that to prevent the list from swelling to unmanageable bounds I had to limit it to such works as refer directly in their titles to Tea, Coffee, and Cacao.—I am, yours truly,

A. M. FERGUSON.

LIST OF LATIN AND FOREIGN NAMES OF SOME OF THE LOCALITIES OCCURRING IN THE "BIBLIOGRAPHY."

Argentoratum, Strasburg.
Budissina, Bautzen (Saxony).
Colonia Agrippina, Cologne.
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Francofurtum ad Moenum, Frankfort-on-the-Main.
,, ad Viadrum, ,, ,, ,, Oder.
Gedanum, Dantzic.
Gravenhage, The Hague.
Hafnia, Copenhagen.
Hala Magdeburgica, Halle (in Prussia).
,, Suevica, ,, (in Wurtemburg).
Holmia, Stockholm.
Kilonium, Kiel.
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(*To be continued.*)

FRUIT TREE ROOTS.

Widely extended observation has convinced me that few greater mistakes are made in cultivation than by neglect of the roots of plants under our care. Early in my gardening career this truth was impressed upon my mind by many lessons from a respected tutor, and subsequent experience has served to confirm it in every respect. Whether we are dealing with plants in pots grown under artificial conditions as to heat and protection, or with occupants of the open ground, the results are similar. Work connected with potting or planting is too often carelessly or thoughtlessly performed, because the immediate neglect is concealed, but the effects are sure to become apparent later on, when it may be too late to repair the mischief. It is most difficult to convince beginners what delicate and important organs the roots of all plants are, and I have found close supervision, repeated and patient instruction, or sometimes stern reproof needed before the matter is properly grasped.

But it was not my intention to discourse upon root neglect generally just now. I wished to point out with regard to fruit trees one little attention that all should receive at planting time—namely, cutting the damaged ends of the roots cleanly, so that they can heal quickly and thoroughly. Thousands of trees are planted as they are received from the nurseries. Probably the roots are spread out carefully and the planting done in a correct in all other respects, but a large proportion of the labour is lost when that one point is overlooked. It is as necessary to cut the roots ends smoothly and sharply if fresh feeding fibers are desired as it is to make a clean section of a cutting to be rooted.

Some years ago I was present at a lecture delivered by Mr. J. Wright in the Crystal Palace, when the chief subject under consideration was, the treatment of fruit tree roots at planting time and the subsequent results. Diagrams were employed to illustrate what was being explained, and one of the most striking was that which depicted the effects produced by cutting the tips of roots cleanly as compared with rough hacking or non-attention to trimming. Such results had come under my notice many times in actual practice, but I had never seen the matter so clearly illustrated before, and that appeared to be the general opinion of those present.

It is so important that I thought a few examples would serve to call attention to it now. Specimens are therefore enclosed, cut from roots of dwarf Apple trees planted last year, and which have just been lifted to enable some alterations to be made in the garden. They are fair examples of several hundreds and were not especially selected.

Fig. 81 (Worcester Pearmain on the Paradise stock) is a portion of a root that was improperly cut. The lower portion has not healed, and the only new rootlets produced are a few in the upper part. Happily there are not many such unsatisfactory specimens, as nearly the whole of the root trimming was done by myself or under my immediate supervision. Fig. 82 (the same variety) includes examples of careful and clean cutting, where complete healing of the wounds has taken place, and a quantity of young feeding rootlets have been produced from the ring of new tissue formed round the cut edge; while in one case the whole of the cut surface has been covered with fresh cellular growth, which has emitted a thicket of fibrous roots. The value of such growth as this compared with the former cannot be misunderstood. In the latter the trees had not only recovered from the check, but they were even in a better condition as regards their roots than they were at the first planting. Fig. 83 is from the same variety of Apple on the Crab stock, and is sent to show the marked difference in the style of root growth in a very early stage, the roots few, straight, and comparatively fibreless.—A BRITISH GARDENER.—*Journal of Horticulture.*

ORANGE CULTIVATION IN CEYLON.

MR A. J. PEARSON ON HIS NEW SCHEME.

Our London correspondent two weeks ago gave our readers some idea of the plans Mr. A. J. Pearson has in view for growing oranges and lemons in Ceylon on a much larger scale than has hitherto been attempted, and some further particulars supplied by Mr. Pearson in the course of an interview will, we feel sure, be read with interest. Mr. Pearson knows Ceylon well having resided in the island for several years before he went to Australia, and there has carried on fruit culture for the last five years on his own estate (of some 60 acres) at Mildura. Believing that what he had found so promising in Australia was likely to be even more so if tried in Ceylon, he availed himself of a trip to England to bring up some young orange trees from the Mildura groves and plant them up-country, at the same time inspecting some that he had sent up previously for planting to Mr J. Brown of Messrs. Brown & Co. of Hattou. He found the latter doing very well, and, though he has not yet had an opportunity of seeing those more recently planted, he says he has heard

nothing to lead him to suppose that they are not progressing equally well. He is, therefore, convinced that there is a very bright future in Ceylon for this new planting industry, and he has decided to remain in Ceylon for some time; seek a grant of land from Government on favourable terms; form a syndicate to work it; and start the new venture on a commercial basis.

HIS PLANS

"I propose to ask the Government," he said, "to let me have 300 acres of land, 50 of which would be planted up at first, and the remainder afterwards when we saw our first returns. In my opinion the best site would be some where in Uva, though Mr. J. L. Shand (of the firm of Messrs. Shand and Haldane) suggested Teldeniya. I, however, think Uva would be better, because we can be sure of dry weather there in the ripening season, and fruit which is ripened when the weather is dry has a better flavour and is firmer than fruit ripened in wet weather. The ripening season in Dikoya is when the monsoon is on, and the fruit consequently is watery and will not keep or carry so well as fruit grown in dry weather.

"What kinds of fruits do I intend growing? Oranges and lemons entirely at present, though limes would not be a bad thing, for, when I was at home this time I found them selling for tenpence a dozen in Edinburgh I should, of course, cultivate the Lisbon lemon, while the classes of Oranges I should introduce would be three in number, namely, the Washington Navel, the Mediterranean Sweet, and the Homosassa oranges. They are all very fine fruit. The Washington Navel was introduced to Australia from California, and it grows exceedingly well at Mildura. It is the best orange in existence in my opinion. It is seedless—only a very few of the oranges have a seed, and never more than one (in the centre); it has a very tough—but thin—skin; and it is double the size of the orange ordinarily seen here. That, of course, is the *desideratum* in orange-growing—to get the maximum of the edible with the minimum of the waste quantity in the fruit. The kind of orange I refer to sells at two-pence each in Melbourne; while the Earl of Ranfurly, one of the largest holders of land in Mildura, had an offer from Melbourne this season of £1 per case for 10,000 cases if he could supply them. At present all the oranges that are grown in Australia are sold there, and I anticipate that all we grow in Ceylon will be sold locally for a long time to come. In some ways, it seems to me, Ceylon is better suited for this cultivation than is Australia. The cost of labour is one very important matter, and labour is a great deal cheaper here, and there are other advantages. For the first few years we should not require a great amount of labour, but of course in the plucking season a lot of hands are necessary. The principal labour is wanted for picking and pruning, and that would be at one season in the year, though the season is protracted—especially for lemons.

THE TIME REQUIRED.

"I have heard the objection raised," said the interviewer, "that you would have to wait a long time for your first results. Is the orange-tree long in perfecting?"

"It depends whether you grow from seedlings or from grafted trees. If you grow from seedlings you have to wait a matter of seven years for a return, but with grafted trees you begin to get a return in three years. I should adopt the latter plan, and not only for the sake of quick returns. If you grow from a seedling you seldom get so good a class of fruit as you got on the parent-tree, whereas from a grafted tree you get a precisely similar fruit as the parent tree yielded. That is why orange-growing in Ceylon has deteriorated, the little there has been of it. Seeds have dropped off the trees and struck into the soil and grown, and then the young tree has been transplanted. I should, on the other hand bring up grafted trees from Australia, plant them here, and also form nurseries for propagating varieties by grafting them later on."

THE CURING OF THE FRUIT.

"Do you think you could produce a really fine, flavoured fruit?"

"I feel sure of it; and, as for sending the oranges over long distances in good condition, the great thing lies in the curing. The oranges that are now sold here are as a rule simply picked and sold—not cured at all. What I mean by curing is this: the oranges are sweated in heaps and dried off, and the effect of this is to make the rind a sort of impervious shell, which prevents the fruit inside getting injured. When they are packed with the skins soft, they often rot, but curing prevents that, and, as shewing what can be done by curing, I may say that, when I came here in August, there was a Mr. Smith with me—a man who had been all his life orange-growing—and he brought up some cases of lemons from Mildura. They had been packed a month before they were shipped; they were, of course, three weeks in coming here but they arrived in perfect condition, and some cases that he intended to take on through India lay at the wharf for a fortnight and were examined at the end of that time and found to be still as good as when they were shipped. That I attribute entirely to the curing process."

"How many trees should I plant to the acre? I think that here the trees might be planted closer together than in Australia. Down there, as horse labour is employed, we plant 80 trees to the acre, but in Ceylon, where we should only have hand labour, I think we might put 100 trees to the acre. And as to the soil? The Ceylon soil is poor compared with Australia, but the orange tree is a surface-feeder, and orange cultivation is largely dependent on manuring, and some chemical fertiliser would have to be used."

A FEW FIGURES: £50 TO THE ACRE!

"And now for a few figures."

"Well," said Mr. Pearson, "it may be interesting to you to know that in Jamaica last year the output was over half a million sterling, and the output of Florida is a million and a half sterling; but there is still plenty of demand, for when I went home I interviewed a lot of men in Covent Garden and they said that if we in Ceylon could send home oranges from the beginning of August till the end of October almost fancy prices could be realised, for at present oranges cannot be had till the beginning of November, and then they are Jamaica oranges selling at two-pence a piece and very poor at that. As to the profit to be derived from orange-growing, I consider that £50 nett profit per acre is a very moderate estimate,—in fact, under the mark—and that return, of course, is far better than can be got from tea, seeing that £10 an acre of profit is considered very good indeed.

In conclusion Mr. Pearson mentioned that he had been out to the Agricultural School in Colombo and inspected Sig. Zanetti's vines, and the appearance of these had given him still greater encouragement. He himself had undertaken viticulture in Australia, and ten acres of his land at Mildura were planted with vines, but he does not contemplate grape growing here. He says that he should have thought Colombo particularly unsuitable; but he found the vines as healthy-looking as the best he had seen in Australia, and he does not know how Sig. Zanetti has got over the difficulty of perpetual summer unless he has bared the roots of his vines and so introduced artificial dormants. After what he has seen in Colombo, he thinks that grapes might be successfully grown up on the hills.—*Local Times.*

COFFEE IN JAVA.—In 1895 the total crop of coffee harvested from the private estates in Java was 318,574 piculs Java, and 30,987 piculs Liberian coffee, whereas the estimate for 1896 is 371,858 piculs Java, and 53,657 piculs Liberian coffee. —*London and China Express*, March 6.

TEA AVERAGE AND INVESTMENTS.

A planting correspondent writes:—What low tea averages there are now. Scarcely 10 estates reach the 10d. 8½d tea with exchange at 1s 2⅞d will not make us fat. We hear that dabblers in tea shares are finding facilities for borrowing money becoming less and less available, and a very good thing too. When shares only give 10 per cent while tea is booming they are likely to give only 5 per cent in bad seasons or when low prices prevail.

You hear it argued, go in for sterling companies. Sterling Companies such as the old Ceylon, Company, Limited, and Lanka teach a different lesson. If you buy too dearly in either sterling or rupee companies, the day of reckoning comes.

THE KANDYAN HILLS COMPANY, LIMITED.

An extraordinary general meeting of this Company was held at the Offices of the Company, No. 21 Baillie Street, on the 7th March. The following special resolution was adopted by the meeting:—

"That the Directors be authorised to grant a mortgage to Messrs. R. A. Bosanquet, G. F. Trail and J. D. Balfour over the Pansalatenne Estate, to secure the payment of the sum of £4,500 sterling (being the balance purchase money for the estate), on or before the 31st December, 1898, and until payment to pay interest thereon or on any balance remaining due thereon at the rate of 7 per cent."

COMPANY MEETINGS.

The first general meeting of the Kelani Tea Garden Company, Limited, will be held on Thursday, March 12, to receive the report of the directors and accounts to December 31, 1895; to elect directors, and to appoint an auditor. The first general meeting of the Udabage Company, Limited, will be held on Saturday, March 14, to receive the report of the directors and accounts to December 31, 1895, to elect directors and, to appoint an Auditor. The first ordinary general meeting of the High Forests Estates Company, Limited, will be held on Saturday, March 21, to receive the report of the Directors and accounts to December 31, 1895. The annual ordinary general meeting of the Maha Uva Estate Company, Limited, will be held on Saturday, March 21, to receive the report of the directors and accounts for the past year, and to declare a dividend. The annual ordinary general meeting of the Estates Company of Uva, Limited, will be held on Saturday, March 21, to receive the report of the Directors and accounts for the past year, and to declare a dividend.

TEAS TAKE A TUMBLE.

MARKET OVERSTOCKED WITH CHEAP ARTICLES.

TARIFF: A SUGGESTED REMEDY.

VIEWS OF IMPORTERS—MANY GROCERS NOT QUALIFIED TO MIX TEAS PROPERLY—MUCH RUBBISH SOLD.

Ever since the cessation of hostilities between China and Japan the price of tea in the markets of the United States has been gradually falling, until now it has reached a point beyond which it can hardly go and show a profit to the importer. This has been brought about largely by the fact that importers had rung the changes on the prospects of a long war, and advised the buying of large quantities of tea by the distributing trade, and the result is that there is now probably the largest stock of tea here that this country ever had, and apparently no outlet for it at the moment.

The proposed duty on tea is causing considerable comment in tea trade circles, and there is a great diversity of opinion as to just what effect a specific duty on tea would have in checking the importation of spurious and adulterated teas. A number of importers who were seen by the representative of the *Press* feared that the imposition of a duty of 10 or 15 cents a pound would not in itself check the importation of low-priced teas. They feel that the teas now pronounced unfit for use could still be imported, and that the only way to absolutely stop this admitted evil would be by the rigid enforcement of existing laws against the importation and sale of exhausted, adulterated and spurious teas.

VIEWS OF IMPORTERS.

Among the gentlemen seen in reference to this important matter were R. Blechynden, the Commissioner for the India Tea Association of Calcutta, who represented the India tea industry at the World's Fair. Mr. Blechynden was rather loath to talk on the subject, but he finally said:

"Of course, the duty, if imposed, would have some effect upon us, but it is difficult to say beforehand what that influence would be. Taking the figures put forth by the Tea Committee which started this agitation as correct, the average price of tea landed in the United States is 14·6 cents per pound But the average price of India (in which may be included Ceylon) tea is 25 cents per pound. If the standard of quality is raised, the pure teas of India and Ceylon will have to face a sharper competition with the improved article than they do now, with what is confessedly mostly rubbish.

"But, on the other hand, an improved taste for good teas will be established. In this respect the duty will help the India and Ceylon planters. There are, however, two sides to every question, and the sale of rubbish is to some extent a help to the pure English-grown teas, as the grower can buy the former, say at 10 cents per pound, and by mixing them with 15 per cent. of pure India tea, which would cost say 20 cents per pound, he could produce an article which he could sell better and be of better value than the 'rubbish' at 15 cents per pound."

NO COLORING USED IN IT.

Among others seen was the firm of Bottomely & Beling. Mr. Bottomely who has been a practical tea grower in Assam for sixteen years, said that while he was not competent perhaps, to speak of China and Japan teas, in the manufacture of teas in India and Ceylon, not the slightest coloring matter was used. The natural color of the manufactured leaf is black and not green, the tea being made entirely by machinery and dried in hot air furnaces.

"All green teas are colored with substances more or less harmful," said he, "and the idea that most consumers have that the natural color of the leaf is green and not black is erroneous."

Mr. Beling, who is a native of Ceylon, and was secretary to the Ceylon Commission at the World's Fair, said: "I was surprised to see the statement in a recent issue of a morning paper that not an ounce of pure tea comes into this country from China and Japan or any other tea-growing country, and that all tea leaves are colored as they are dried. This is certainly very fallacious and misleading. It may be true of China and Japan teas, but to embrace India and Ceylon would be absurd, and the importer who made the assertion is ignorant of the modern processes of manufacture in those countries."

WILL IMPORTERS ACT?

Mr. Beling thought that in attempting to prevent the importation of spurious teas the matter lay in the hands of the importers. If they ceased importing tea at 3 cents a pound—tea made of willow leaves—the public would be served. Public taste could soon be improved, and tea drinkers would pay a fair price for a good article.

America is not as great a tea drinking country as it should be, because it has been made the dumping ground of tea offal. With the public satisfied that it is buying a pure article there is no doubt but that the consumption of tea here would rapidly increase, for as a beverage from a health

standpoint it is preferable to coffee, being less injurious to the nervous system, according to the best physicians of the land.

A. R. Robertson of No. 138 Front street said: "I think a duty upon tea a very wise move indeed. If people would sift the matter to the bottom, they would find out that it is almost the only remedy for the salvation of the business. The general trade has been ruined by offering consumers what virtually is either a bad, or at best, not a desirable beverage, to put it in mildest form.

"During my business career in this country, nearly 20 years, I have found out over and over again that if you can sell people good tea, you not only gain their confidence, but their trade. They flourish and so do you. Consumers buy their tea from a grocer with whom tea is only one branch, and although there are a large number of keen, intelligent men among the retailers, unfortunately there are few who have had the opportunity to study teas in such a manner as to be able to blend them scientifically, and which is really required to make a refreshing cup of tea. The bulk of tea sold is mixed, prepared in a slipshod manner behind the store or upon the counter.

"When they first start, they have a good mixture and get some trade, but as they grow busier they degenerate into buying tea on its appearance, taking for granted as long as it has the style the liquor will be all right. But the result is that the customer does not like the change and either moves his trade to another store or begins using more coffee and less tea, a fact that can be seen on the faces of dozens of people you meet every day.

HOW TO BUY TEA.

"Tea is a healthy, useful beverage and every one would do well by using some at least once a day for their own benefit. Tea should be bought entirely on 'cup' quality—never by appearance—as the idea that this sample looks as well as that and is ten cents a pound cheaper is the stumbling block of the business.

"The remedy is open for you. Put a heavy duty upon all teas, which will debar importers from taking chances upon rubbish even at a low price. The better teas imported will then be possessed of the refreshing, stimulating properties which we drink tea for, and then its benefits will be felt with the result that the demand will increase right along.

"Should the duty not be levied, then other means must be found to keep up standards of quality, and revive the business."—*The Press, New York*, Feb. 2.

PLANTING AND PRODUCE.

THE MARKET FOR TEA IN NORTH AMERICA.—From the figures given in the circular issued by Messrs. Gow, Wilson, and Stanton, it will be seen that the result of the efforts made to popularise Indian and Ceylon teas in North America is very encouraging, and that the outlook is most hopeful. An advance from 5,360,083 lb. to 9,283,141 lb. in a year is a really substantial result, and should encourage planters to go ahead in the same direction with renewed energy. As Messrs. Gow, Wilson, and Stanton point out, a market where 100 million pounds of tea are consumed annually is worth working for, and such an enterprise should not be retarded for want of funds. As a matter of business pure and simple, the work should be supported and encouraged in every possible way, even if it necessitates the raising of the levy for next year. To halt now would be a serious mistake, while a policy of enterprise and liberality cannot fail to show valuable results. The circular referred to shows that India and Ceylon teas are advancing in public favour everywhere, and that planters may congratulate themselves not only on the present extensive demand, but on the chances in favour of a steady increase in the consumption all over the world.

CHARGES ON PRODUCE.—The subjoined protest against the prosposed agreement between the London and India Dock Joint Committee and the shipowners, involving an increase of charges on produce, has been signed by a very large number of merchants and other persons and firms: "London, February 10, 1896. To the London and India Docks Joint Committee. Gentlemen,—We the undersigned merchants, importers, exporters, and brokers of the City of London, hereby protest against the agreement proposed between you and the shipowners of London, relative to the delivery of cargo brought to this port, and to charges on same, as we feel certain that the advantage of any addition to your revenue which may result from these increased charges will be but temporary, and will be at the cost of great permanent and increasing injury to the trade of London. We must point out to you that the merchants and importers, who have hitherto had the right of taking their goods from the ship free of charge, have not been consulted, although it is now proposed to take away this right from them. That the existing London charges are already in many cases above those of competing foreign ports, and that already this fact and the increased facilities provided by the Continental ports have seriously interfered with our trade, and diverted a large proportion of goods from this port; and, therefore, that any increase in these charges will further cripple London produce business and divert it still further to other places. That, with reference to goods sold here for transhipment, the pursuance of such a policy as you propose can have no other result than to destroy the greater part of this foreign *entrepôt* trade of London, and give a further impetus to the same class of business at foreign ports."

THE OUTLOOK FOR COFFEE.—Referring to the position of coffee, which towards the close of 1895 was apparently involved, the *Grocer* says it has, in a comparatively short time, become more clearly defined, and what appeared doubtful and problematical is now seen to be almost certain of being attained. In the first place it may be noted that the expectations of a total yield of 5,500,000 bags for the Brazil crops of 1895-96 are in course of being confirmed by the increasingly heavy receipts that are taking place at the ports of shipment, Rio, and Santos; and so long as these keep up, so sure will the effect be to depress the principal markets of the world. A fact still more significant is that the entire production of Brazil coffee for 1896-97, which is even thus early beginning to arrest attention, is now boldly stated to be equal to about 8,500,000 bags, and may probably reach the highest calculation of 10,000,000 bags formed by sanguine individuals months ago. Without waiting for the actual realisation of so enormous a crop as the figures just named necessarily imply, no one can fail to observe that the moral influence of so tremendous a weight of supply being available, and at the disposal of buyers at no very distant date, has already been most powerful, and feeling of depression which showed itself at New York soon after the opening of the present year has since been extended to the "terminal" markets of Europe, where, in sympathy with the decline that has ensued at other entrepôts, a rather rapid fall in quotations has resulted. To appreciate this reaction at its full worth the trade must go back to the time (at the close of November last) when the rates quoted for fair Channel Rio at the London Produce Clearing House were as follows: 64s 6d to 63 6d for December to May deliveries, 61s and 58s 6d for July to September, and 55s 6d for December of this year. From the average of these prices there has lately been a reduction of 6s per cwt. making the value of the same quality and description of coffee on the 6th instant, 58s 5d and 58s 6d for March and May next, 55s for July, 53s for September, and 50s 6d for December, delivery, with the prospect of a further depreciation as the season progresses. For similar periods to the above the quotations in February, 1895, ranged from 70s down to 66s, showing unmistakably how great has been the concession in price from the then highest point.

THE REQUIREMENTS OF THE TRADE.—Nothing like so severe has been the drop in quotations for landed parcels of coffee in the London market, and even where there has been some approach to it the lower prices established have been principally, if not exclusively, for the commoner sorts, which the

trade, purchase with the utmost reluctance. The dealers however, have yet to receive the bulk of the supplies of the new season's crops from the East Indies and Central America, when the market on the spot will be fairly tested and business placed on a sounder footing than it is now. What the home trade really want is a liberal assortment of colory or fancy coffees, such as are to be found among the plantation growths, which are much too dear to make their larger consumption possible, and a return to a lower range of prices for these particular kinds would come as a boon to the retailers of genuine coffee throughout the kingdom. Spurious compounds and foreign admixtures, in imitation of the pure article, would then be less able to compete with the well-selected and carefully-blended preparations of the real aromatic coffee berry; and votaries of the same would have restored to them in all fulness the peculiar fragrance and gentle stimulus of their favourite, though long neglected, drink. The time of year is fast approaching when an ample supply of desirable qualities will be on offer, and, with the promise of more reasonable prices ruling while it lasts, there may be an opportunity for the dealers and others to secure better profits on their sales than they have been in the habit of obtaining hitherto.—*H. and C. Mail*, Feb. 21.

THE PUBLIC SALES.

TO THE EDITOR OF THE HOME AND COLONIAL MAIL.

Sir,—It is pretty generally admitted in the market that some alteration of the days of the public sales might be made with great advantage to those whose duty calls them to attend regularly.

The point which strikes one most forcibly on looking into the subject is the utterly unreasonable policy of crowding the entire offerings of Ceylon tea into one day's sale in each week. The number of samples which have to be valued is proportionately greater than in the Indian sales, and the length of time taken to sell 1,000 packages of Ceylon tea being also greater owing to the smaller average size of the breaks the effect is that Ceylon buyers have on one day of the week a most exhausting ordeal to undergo if they faithfully sit through the whole sale. Common sense would suggest that in the interests of sellers, and for the greater convenience of buyers, the week's offerings should be spread over two days. But the difficulty is—which days should they be? Monday has been the Indian tea day for many years, and could scarcely be interfered with Tuesday has been the Ceylon sale day for a considerable time. Wednesday has been another Indian sale day, when generally about half a week's offering came to the hammer and Thursday has been a sort of make-weight day, when about a tenth of the total quantity of Indian tea offered in the week is brought to sale, Friday and Saturday being unappropriated. It is somewhat difficult to make changes that will be universally approved, but there is no question that much good would result from some lightening of the labour of those engaged in the Ceylon sales on Tuesdays, and it might perhaps be found a convenient way out of the difficulty to adjourn the Tuesday Ceylon sale punctually at two o'clock until Wednesday at twelve o'clock, when the remainder could be sold with the benefit of an extra morning's tasting. But, this, of course, takes away Wednesday from the Indian sale, and to meet this objection let the week's offerings of Indian tea be divided into two sales—Mondays and Thursdays—still retaining Monday for the larger part, say three-fifths of the total on Monday and two-fifths on Thursday. Then it is evident that the opportunities for tasting the samples would be more evenly distributed over the week, and confidence in the valuations, which is the surest guarantee of satisfactory biddings, would naturally result.—I am, &c., D. F. Shillington.

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TO THE EDITOR OF THE HOME AND COLONIAL MAIL.

Sir,—As your valuable paper reaches nearly all who are concerned with Indian tea, will you kindly be the means of ventilating a proposal which, I understand, is likely to be made to importers and their brokers by some of the London buyers.

It is to do as Calcutta does, and to cease holding any public auction of Indian tea for some few weeks in the summer in order to give "the market a period of rest, and to agree to a date upon which the first public sales of new crop shall be held in London.

If the proposal be a good one, there is not much difficulty in carrying it out now that nearly all producers close their crops so much earlier than they used to; but such arguments in its favour as there may be will no doubt be put forward by those who urge its adoption.

My object in writing to you is merely to secure early consideration for the proposal; inasmuch as the co-operation of shippers in India with importers in London would be required to effect it. Speaking from somewhat considerable experience, however, I may perhaps be permitted to say that the small intermittent sales during June, attended by unwilling buyers, are not altogether conducive to the interest of producers.—Yours faithfully,

Herbert S. Parker.

38, Mincing Lane, February 20.—*H. and C. Mail*, Feb 21.

DISEASE AMONGST COCONUT TREES.

TO THE EDITOR OF THE "TIMES OF INDIA."

Sir,—Coconut trees are attacked by a disease called in Goa *Mandolim*, which manifests itself in two forms, in one of which a gummy liquid runs out from small slits in the tree, and in the other a yellow powder is formed and thrown out from similar slits. The disease generally appears in the more healthy and luxuriant plants, and the cultivators comes to know that a tree has been attacked only when the leaves begin to droop lifeless and the fruits to fall. It is strange that no mention is made of the disease in either Watt's "Dictionary of Economic Products" or in the "Bombay Gazetteer," which leads me to the conclussion that the disease is localized. Can any of your readers inform me wether coconut trees outside Goa have been seen attacked by *Mandolim*, and also give me the causes and the remedies used in its cure. I myself believe that the disease is the result of a fungus, but I cannot be sure, as I am not an expert at examination with the microscope. In Goa the cultivator makes a hole through the tree above the part affected, but this cure is not always successful. I have with me specimens from trees attacked, and will only be too glad to show them to anyone desirous of seeing them. Mr. Bernardo Francisco da Costa, who lately died at Diu, has written an interesting book in two part—*Agricultor Indiano*—in which he treats minutely of the disease. Before him a Jesuit, who was in charge of the vast plantations his Order possessed in Salsette, Goa, had described the the disease in his *Arte Palmarica*. The diseaso must be one which has existed for years. The specimens above referred to I obtained through the kindness of Mr. da Costa, just a month before he left for Diu. J. C. Lisboa.

—*Times of India*, March 3.

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A writer in the *Times of India* says:—In reply to Dr. Lisboa's letter in your issue of this day soliciting information as to whether coconut trees outside Goa have been seen attacked by a disease called in Goa *mandolim*, I have much pleasure in informing him that I have seen and examined coconut trees attacked by *mandolim* at Madras, Cochin, and Travancore, and even at Juvem, near Bandora, and I can assure him that the disease is not confined to Goa alone or localized, as he believes it is. In my own little garden at Mazagon I have two fine coconut trees brought down from Penang and planted some years ago, one of which was last year attacked by the disease or insect called *mandolim*, which was instantly removed by a Goanese toddy-drawer, almost all of whom are experts in cocoanut cultivation and

the cure of trees attacked by *mandolim*. Not many months ago I read several well-written articles in the Goa newspaper called *India Portugueza* on the cultivation of coconut trees and the insects which kill or attack them, and I would recommend our expert in Botany to peruse the same. A book on the same subject was also published in Trevandrum some 25 years ago by order of the Dewan, the late Sir T. Madhava Rao, copies of which are, I believe, still available in Trevandrum, and he will find that coconut trees both at Madagascar and the West Indies are also subject to the same disease; but, as in the case of the coffee-borers, bugs and leaf disease, no remedy has been discovered as yet to prevent a repetition of attacks from beetles, borers, mandolims, &c. The insect generally attacks young and luxuriant plants, particularly those well watered and heavily manured.

THE DIMBULA VALLEY (CEYLON) TEA COMPANY, LIMITED.

By mail we have particulars of the prices paid for the several estates purchased by the Company, viz. Tillicoultry £30,000, Belgravia and Elgin and Bearwell and Mousa Ella £93,500.

DR. TRIMEN.

We desire to welcome back to Ceylon Dr. Trimen, the respected Director of the Botanical Gardens, and to express the hope that he will enjoy a measure of good health, not only for his own sake, but for the sake of the great work on which he is engaged. Dr. Trimen is accompanied by Mr. Freeman, a young botanist from the Royal College of Science, South Kensington.

TEA IN AUSTRALIA.

Business in China tea has been rather more active. Sales comprise 550 half-chests common congou, 800 half-chests congou at 4¼d to 5¼d 500 half-chests panyong at 5½d to 6½d 300 half-chests panyong at up to 7d½ 1,050 quarter-chests buds at up to 6d and 300 quarter-chests S.O. pekoe. Of Ceylons 60 half-chests have been sold privately at 8½d and of Indians 70 half-chests, at 9d. At the auction sale on Tuesday there was a good demand for the Ceylon teas, which generally realised firm rates. Out of 562 chests and 260 half-chests offered sales were made of 425 chests and 106 half-chests; pekoe at 6d to 9¼d and pekoe souchong a 6¼d to 9½d.—*Australasian*, Feb. 22.

GREEN TEA.

(To the Editor of the *London and China Express.*)

Dear Sir,—Your issue of 11th inst. In your "Monetary and Commercial" column the writer of the Tea Market Report appears to be under some misapprehension as to the position of "Green Tea." It is quite true the market is unprecedentedly low, and that certain kinds are almost unsaleable at the present moment, but it is altogether incorrect to remark that the class "*seems clearly going out of consumption.*"

The writer of the report has apparently fallen into the popular delusion that because the "home consumption" may have fallen off the class is being displaced by "British grown" teas. As a matter of fact, the deliveries from the bonded warehouses last year were 600,000 lb. more than the previous year, and larger than we have had for some three or four years. The reason of the market this season being so low is because of the large increase in the supplies, both to America and this country. Perhaps you may think this matter worth correction in your next issue.—Your obedient servant,

London, Feb. 18. Green Tea.

TEA-PLANTING IN INDIA.

Advice to Young Men.

In reply to a query concerning the prospects of tea planting in India, a correspondent sends the following extracts from a lecture on the subject delivered by a planter of thirty years' experience:—

All the tea districts are now as a rule fairly healthy. The hill districts are the pleasantest to live in, but in the tea garden ranges in elevation more than, say, 2000 feet (and I resided upon and for twenty-eight years managed one which varied in elevation nearly twice that range), I doubt if, for most constitutions, it be so much more healthy than the plains districts, and I believe the statistics of mortality, if carefully examined, bear this out.

The prospects in tea are, I believe, much over estimated. With those who have tried the tea life the rule has been to retire in a few years disappointed or broken in health, or drag along penniless and often in debt—life being as it were a continual struggle for subsistence—the few successful men holding on too long, most finding a grave sooner or later. Retiring with fortunes or even a competency is the exception. No doubt a small proportion have come home with fortunes or a moderate competency, but those results have been obtained, as a rule, through the purchase and sale of lands, or investment in gardens, under specially advantageous conditions. But, alas, not a few of those who so retired, lived but a very short time, and seemed never to enjoy a day's real health after their return to their native land. The competencies even acquired by service to limited companies or private proprietors have been but few and far between; and though the prospects of private ownership or from speculation seems less promising now, the ventures of the majority in those lines in the past have often been doomed to disappointment or failure. We hear much of the prosperous few, but little of the misfortunes of the many. Such is a fair though unvarnished statement of the case, from a full survey and careful study of the statistics of careers within my knowledge and experience.

Rest assured, however, young men, that your inability to obtain desirable appointments and full scope for your energies, where such is the case, you have my fullest sympathy, having myself had that experience from forty to thirty-three years ago, and am well aware that competition is now even more acute. All considered, I am therefore free to admit that those with a capacity for conscientious work would be wrong to decline a really eligible offer in tea. Those suitable for the work and life—energetic, industrious, persevering, and determined to work unremittingly and get on, who can meet with an appointment in a good concern—are likely sooner to get into a position to support themselves, and if economical save a little money, and ultimately do as well as in most lines I know of.

I am further free to admit that India is a highly interesting country. The tea life comes to have many attractions for those who take to it, and whatever their fortune may be, there are few who altogether regret their experience. Besides, experienced, conscientious, competent men are always in demand, and sure to get on; but it is at the same time extremely difficult to obtain suitable candidates, and next to impossible to convey to them, before leaving home, any adequate conception of the life, duties, or necessary equipment.

As yet tea appointments have not been thrown open to competitive examination, nor could they well be, in so much as the tests ought to be character, industrious habits, and physical qualifications. The only way to obtain such appointments is through knowing proprietors, managing agents, directors, or estate managers. Appointments are much run upon, and therefore difficult to obtain. As a proof that the supply of applicants far exceeds the demand, many well educated young gentlemen join tea gardens as what is styled "creepers," that is, giving their services for nothing, in addition to paying their own board—some actually paying down a good round sum in shape of premium for permission to learn the business. Let

such at least make sure that they are going to a good climate, and not find themselves set down in the Darjeeling-Terai instead of the Darjeeling Hills, as has happened. No one should go out on chance on any consideration, but have an appointment assured before setting sail.

The main qualifications for an assistant on a tea garden in order of importance are a thorough practical knowledge of mechanical engineering, gardening or farming, building, surveying, accounts, tea-tasting, correspondence, medicine. But mechanical engineering is not now of the importance it once was, or which many attach to it, because in all districts there at the present day no lack of qualified engineers devoting themselves specially to that branch, a smattering of engineering being often worse than useless. The same in regard to medicine; a little knowledge in that line, as can easily be understood, is a dangerous thing; and there are now numerous qualified practitioners, with native doctors under them, on tea gardens. The same applies to tea-tasting, though also an important branch of the business. To be a successful planter a man need not necessarily be muscularly strong, but he should be endowed with a constitution sound in every fibre, and have good powers of resistance of fatigue and contagion. He had well also be a good pedestrian and a fair horseman.

Though the duties are not always exhausted throughout the whole course of the operations, the hours are generally long—often from 5 a.m. till 9 or 10 p.m. during busy and anxious times; and as a rule the more a man can be at his post or in readiness to drop into it, and the closer his supervision of details, the better. During from five or six months of the year Sunday labour and supervision are frequently unavoidable in connection with manufacture. The life, as a rule, is a retired and solitary one, beset with peculiar temptations, and often wanting in plain comforts. To resist the climate, the worries and monotony of the life, a sound mind in a sound body, is, in short, absolutely necessary.—*Weekly Scotsman*, Feb. 15.

THE COMMERCIAL STORY OF QUININE.

BY FRANCIS B. HAYS.

At the bark auctions in Amsterdam Jan. 16th the bidding on cinchona augured a further advance in the price of quinine, and this naturally brings to mind that perennial subject, the varying figures at which that drug is sold from year to year. Speculation as to whether the price of that universally employed alkaloid will ever reach the figures which were once used in quoting it is out of order, as no sane person dreams that quinine will ever fetch more dollars per ounce than it has recently been fetching cents.

Although made in the laboratory as early as 1820 by Pelletier and Caventon, quinine sulphate remained little more than a curiosity for ten years, during which time it dropped in price from $20 in 1823 (the first year when it was on the market commercially) to $1.75.

The physician Maillot, to whom the credit of introducing this drug as a popular remedy for fevers belongs, more than to any other one man, perhaps, died recently at the age of 91. He gave it to French soldiers in Algiers in 1834, reducing the death rate from 1 in 3½ to 1 in 20 the first year.

In this country the variations in the prices of quinine sulphate from year to year and even during a single year have been phenomenal. The readily understood causes of the tariff, the opening of new groves, cultivation of the trees and such things have, of course, exerted influence on the commercial aspect of the drug, yet some rises and falls in the price seem to have been purely idiosyncratical, as it were. During the latter part of the '50s the low tariff brought quinine down to a lower figure than it had ever before reached. This price held the record until 1884; since then we all know the story. At the beginning of the war between the States, owing partly to increased consumption and greater perils of navigation, the price began a rapid climb, until in 1864 it was higher than it had been since its general introduction. The tumble the next year was sudden and decisive.

In 1877 the enormous price of $4·50 per ounce was reached; this is high-water mark since quinine has been a staple. These variations I have shown in a graphic manner in the annexed diagram* which needs no explanation further than the statement that the continuous tracing represents the highest prices at which quinine sulphate has sold each year from 1829 up to the present time, and that the dotted line beneath represents the lowest prices during the same period. As it was not possible to indicate with accuracy the prices in cents on a diagram of convenient compass, we append a table showing the precise figures. When quinine fell from $4·50 in 1877 to $1 in 1884 speculators bought large quantities of it, expecting it to go up again. Should any of them glance at this diagram, the magnificent and continuous downward sweep of the lines for several years past will probably produce a sensation similar to that made by taking an unexpected and too precipitous toboggan ride. John G. Longdon, who died at Kansas City, Mo., a few weeks ago, was one of the heaviest plungers into $1 quinine. He took 100,000 ounces, which he was reported to be still carrying at the time of his death. He was not compelled to sell, and declared that he never would until he could make a profit, or at least come out even. A loss of $75,000 or $80,000 was not a very severe blow to him. Some others are less fortunate.

PRICE PER OUNCE.

	Highest.	Lowest.		Highest.	Lowest.
1823..	$20·00	$16·00	1860..	$1.80	$1·20
1824..	14 00	12 00	1861..	2 10	1 80
1825..	8 00	8 00	1862..	2 90	2 25
1826..	7 00	5 25	1863..	3 25	2 70
1827..	7 50	6 00	1864..	3 75	2 60
1828..	6 00	3 25	1865..	2 40	2 20
1829..	2 90	2 25	1866..	2 60	2 35
1830..	2 50	1 75	1867..	2 20	1 95
1831..	1 50	1 35	1868..	2 35	1 90
1832..	2 00	1 75	1869..	2 30	2 00
1833..	1 87	1 70	1870..	2 30	2 10
1834..	1 80	1 25	1871..	2 45	2 20
1835..	1 65	1 60	1872..	2 45	2 40
1836..	1 58	1 45	1873..	2 55	2 45
1837..	1 40	1 40	1874..	2 50	2 20
1838..	1 90	1 60	1875 ..	2 30	2 15
1839..	3 30	2 75	1876..	2 70	2 20
1840..	3 12	2 87	1877..	4 50	2 70
1841..	2 62	2 50	1878..	3 60	3 40
1842..	2 00	1 60	1179..	3 60	2 60
1843..	1 80	1 55	1880..	3 25	2 25
1844..	3 00	2 00	1881..	3 25	1 90
1845..	2 40	2 35	1882..	2 50	1 80
1846..	2 40	2 20	1883..	1 80	1 60
1847..	2 40	2 30	1884..	1 80	90
1848..	2 70	2 60	1885..	1 05	75
1849..	3 65	2 95	1886..	80	65
1850..	3 70	3 70	1887..	70	46
1851..	3 25	3 25	1888..	50	30
1852..	3 00	2 80	1889..	30	22½
1853..	3 20	2 70	1890..	32	23½
1854..	2 50	2 50	1891..	24	18½
1855..	3 00	2 60	1892..	20	17
1856..	2 60	2 40	1893..	22½	17¾
1857..	2 00	1 40	1894..	25	22
1858..	1 40	1 25	1895..	27	22½
1859..	1 50	1 25			

It will be noted by reference to the tables that the highest and lowest price in 1837 were the same. A similar uniformity existed in 1850 and 1851. and again in 1854, since which time such a coincidence has been lacking. The highest price did not vary for the three years beginning with 1845, and several times since then it has been the same for two consecutive years. The lowest prices, on the other hand, while not presenting such extremes, are

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* Not reproduced.—ED. *T.A.*

more vacillating, never falling into the same notch twice in two years. Bottom was touched in 1892, since which time a gradual rise has been noted. This is accounted for partly by the fact that manufacturers are keeping the drug out of the hands of speculators as far as possible, and only making enough each year to supply the legitimate demands of the trade.

The figures for later years refer to the foreign makes, some American brands being a couple of cents or so higher.—*Druggist' Circular*, Feb. 1896.

DELFT GRASS.

The Principal of the Agricultural College write to us:—

The so-called "Delft grass" to which reference was made by you, as having been tried at the School of Agriculture, was, so far as growth is considered, a great success. I have referred to the experiment somewhat in detail in my annual report for 1895. My experience of the grass as a fodder is that neither stud-fed horses nor cattle will eat it, but cattle at grass will browse on it, particularly when other natural grasses are scarce. Indeed, it is what I am informed is the case even in Delft, and it is no doubt an advantage to have such a grass as is able to flourish when other grasses fail owing to drought and also that it is not eaten down except when these latter are scarce in pasture land. The grass (of which I forward a specimen) is variously known as "geranium grass," "rusa oil grass" and "oil of ginger-grass," its botanical name being *Andropogon Schœnanthus*, var. *versicolor*. It is said to be found wild in parts of India and some accounts mention that it is a favourite fodder for cattle. From the grass is extracted an oil which is used to adulterate attar-of-roses. The Tamil name for the grass is "attar pillu." Though it is supposed to exist in none of the other Northern islands except Delft, Mr. William Ferguson mentions that it is common at Wilson's Bungalow. It is most appropriately named the "anise-scented grass," and when bruised emits a strong odour.

KALUTARA PLANTING NOTES.

Bentota, March 9.

Weather.—After a spell of 23 days of scorching weather we were last evening favoured with a small shower depositing however only 0·23. The drought we may say has lasted since the 29th January ready for me only had 0·47 during all Feb. The season so far as been very similar to last year, last year we had 6·35 in Jan. and 1·19 in Feb. This year 9·39 and 0·47. The weather has been very trying on the tea bushes especially those near rocks. Even the jungle shrubs and crotons about the bungalow are drooping. It looks cloudy again this morning and it is to be hoped we will get a more liberal supply of moisture some time during the day.

Health.—Not much to complain of, on the score of health; a little fever prevails mostly brought over from other parts of the country.

Communication.—Roads in good order and Munamalwatta Bridge finished.

Railway.—It is surprising to find that bullock carts can successfully compete with the railway, at all events as far as Alutgama, nearly all the boutique-keepers in Bentota and Alutgama got their goods across by carts. This surely should not be. The refreshment bar having taken up the ladies' waiting-room, lady-passengers are often put to very greater inconvenience. Then again no arrangements seem to be made for the third-class passengers: fancy a third-class passenger (female) travelling all the way from say Matara with no convenience nearer than their destination which may be Bandarawela.

Labour Supply.—Sinhalese labour falling off yearly. Punchi Nona having laid by a supply of silver bangles and good comboys to last them for some time think it not worth their while to turn out to pluck now unless the flush is exceptionally good and they can earn twice as much a day as their husband? Tamil coolies are however coming to the district from India more freely.

Tea Flush.—It is needless to say the flush is almost at a standstill, but on most places the tea bushes are in good heart and only require 2 or 3 inches of rain to make them burst out with a rush.

THE DRAYTON (CEYLON) ESTATES CO.

The ordinary annual general meeting of this Company was held in the registered office (Messrs. Julius & Creasy's) on 10th March. Present:—Messrs. A. W. S. Sackville (in the chair), C. Wilson Wood, H. Whitham (Secy.), C. J. Donald, A. H. Dunsmure and F. Liesching. Notice calling the meeting was read and

THE ANNUAL REPORT

was submitted:—

The Directors beg to submit the annual balance sheet and profit and loss account for the year ending 31st December 1895.

After providing for depreciation of buildings and machinery the balance of profit available is R58,009·95. The Directors propose that a dividend of six per cent be declared, making with the interim dividend of nine per cent fifteen per cent for the year, and the balance R15,109·95 be carried forward to next year's account.

The crop of tea secured from the Company's Estates was 346,695 lb. against an estimate of 330,000 lb., and there were also 24,051 lb. tea made from Cwm leaf. The Cwm estate, consisting of 90 acres tea in full and partial bearing, has been leased by the Company for a period of three years from July 1895, at a rental of R4,500 per annum.

The total cost of the 370,746 lb. tea after deducting profit on made tea for other estates was 27·04 cents per lb., exclusive of depreciation, and estimating that the tea unsold will fetch 57½ cents per lb. the net value realised for the whole crop will be 60·07 cents, showing a profit of 33·03 cents per lb.

The Company's properties consist of—

	Acres.
Drayton:—	
Tea in Bearing	674
Young Tea	95
Grassland	8
Timber	10
Forest	17
Waste Roads, &c.	79
Yuillefield:—	
Tea in Bearing	200
Young Tea	10
Forest and Timber	15
Waste	8
Total acres	1,116

The estimated crop for 1896 is 400,000 lb. to cost cents 27 F. O. B.

Mr. V. A. Julius resigned his seat at the Board on his departure from the island, and the Directors elected Mr. F. Liesching a Director in his stead.

In terms of the articles of Association, Mr. F. Liesching retires from the Board by rotation, but is eligible for re-election.

The shareholders will be requested to appoint an Auditor for the current year.—By order of the Board of Directors,

Harry Whitham, Secretary.

Colombo, 2nd March 1896.

The Chairman moved, and Mr. Dunsmure seconded the adoption of the report.—Report adopted.

A dividend of 6 per cent was declared, making, with the interim dividend, 15 per cent for the year, and the balance was carried forward to share account.

Mr. Liesching was elected a Director, and Mr. Hercules Scott re-appointed auditor.

MR. BLECHYNDEN'S CAMPAIGN.,

The following extract from letter dated New York 7th January 1895, from R. Blechynden, Esq., has been placed at our disposal by the Indian Tea Association :—

THE BAZAAR MEDIUM.

I have now the pleasure of submitting a General Report for the month of December.

As stated in my letter of the 13th ultimo, we assisted at a Bazaar got up by a Catholic community in aid of a Convent which was inaugurated at the Waldorf Hotel, the most fashionable Hotel in the city, and probably the finest Hotel in existence. Cards of invitation were sent out which entitled the recipient to buy admission tickets at one dollar each. We supplied packets of tea in ¼ lb. paper boxes of the kind previously described, and tho small sample boxes which were sold and the proceeds went to the fund. The oards of invitation were worded inviting people to a tea, and the tea was made *the* feature of the Bazaar. At the close of the affair at the Waldorf the Bazaar was continued for three days at the Convent, for a different class of people, where our tea was also served and sold.

A Bazaar was given by the St. Andrew's Church congregation at 129th Street Haarlem from the 3rd to 6th December.

We supplied tea in packets, and loose tea to be served. and kept a coloured girl whom we have traiued to make the tea. The Bazaar also obtained a supply of Indian tea from a packer, so we did not push our packets agaiust his. But contiuued to serve the tea, for the three days and nights the Fair lasted.

YOUNG LADIES DRESSED AS NATIVES.

A birthday party was given at Westminster Presbyterian Church on the 4th December. The name is given to affairs where entertainments are organised by the Church and where members contribute as the price of admission as many "pennies" (or cents) as their year's number. The Church is a well-to-do oue and has good arrangements for such affairs in the shape of large rooms, kitchen etc. attached to the Church. I had arranged to give a lecture on "Some aspects of life in India" (the title was framed to conceal the advertisement) and it was listened to with atttention. The lecture was followed by music, singing, and recitations and at the close all adjourned to a large hall over the one iu which the entertainment had been given, and our tea was served by some young ladies of the congregation dressed in costumes we provided as natives of India. I subsequently received a letter of thanks from the management for my share in the entertainment.

TEA, CIGARETTES AND DIAMONDS.

The fair in aid of Hebrew charities to which I have alluded in previous letters, opened on the 9th December The Jews form a very powerful body in New York, and many of them are well known as leaders in Commerce and Politics. The display of diamonds and dresses was somethiug unique even for America. The Madison Square Gardens had been hired by the Organization, and booth laid out and decorated in a systematic manner. I had the promise of space from a Jewish lady whom I had met at one of the charitable booths at the Food Show, but unfortunately she was laid up at the time the Fair opened, and I had to send Mrs Tipton on the chance of getting into touch with some one in a position to help us. After many rebuffs, Mrs. Tipton interested the "Russian Tea Booth" representing the Both-Isreal Charity. Here tea, cakes, and cigarettes, (all Russian) were served. The Russian tea in this instance being our old friends B. Fischer and Co's Black packet Russian Caravan tea a blend of China, Japan and some India or Ceylon. This tea is largely advertised and is stamped by the Rabbi with a small lead seal, so that it is "Kosher" or clean in a ceremonial sense. Fischer has presented $100 worth of tea (nominal value) to this booth, and was making an excellent advertisement out of it.

A NICE LOOKING SPANISH GIRL MAKES HEADWAY.

We had a good deal of opposition at first and for some time with the people Fischer had in the booth; as they were Jewish women, and could speak German, the language most used amongst Jews in New York. After some time, and by dint of steady and successful work and the display of a good deal of tact on the part of the young girl I put into our end of the booth, and by Mrs. Tipton, we got the support of the ladies in the booth. Our demonstrator here was a young half Spanish girl, who looked exceedingly well in the Native costume we dressed her iu aud who thus attracted a good deal of attention from the visitors to the fair, and made head in this way against the opposition which Fischer's people were able to work up at first. We supplied the packets I have described of Iudian and Ceylon Tea, sample boxes, and tea in the cup.

JEWISH EPICURES.

If the work doue at the Fair introduces the tea into a few Jewish families, it will do us a great deal of good. These people pay extravagant prices for the tea they use, two dollars a pound not being thought out of the way. Mrs. Tipton in her Report to me said :—"The Russian girls served the Russian caravan tea in glass with lemon, but towards the last everyoue took the hot India (and Ceylon) even the ladies in the booth, who were Russian Jews came to Josie for tea."

MOTHERS' MEETING

A meetiug of the mothers of the Bethany Chapel congregation was held in Brooklyu on the 11th December at night and Mrs. Tipton helped by the colored girl served tea there. She gave them a talk aud there was a proposal made that I should give a lecture under their auspices, which they agreed to aunounce in the *Bethany Tiding*, but nothing further has as yet come of it.

TEA AT THE THEATRES.

As there are at present no Food shows in this neighbourhood, and those contemplated in Washington, Trenton and other places seem to me undesirable, I have turned my attention to reaching the Public iu the same manner *i.e.* by actual demonstration, at the Theatres. Through the assistance of Mr. Williams, the gentlemanthrough whom we placed our advertising, I got a footing in the Casino, a handsome theatre prettily fitted up in a curious mixture of Chiuese and Indian styles, and put up a booth and began to serve tea there on the 24th December. The tea is getting to be appreciated, and the arraugements we made are effective enough to enable us to use them as a good introduction to other managers of theatres. We have here a good substantial booth decorated with Indian goods, and with one of the urns put iu to heat the water. The attendant has been for some time the young lady we had at the Jewish Fair, but I think we cau get along as well with a less expensive class of help and I am trying to get the waiteress class. At the Casino the attendant is dressed as a Native, as the style of the Theatre, the decorations of the Foyer, and the fact that some of the assistant ushers are Japanese in costume, make this almost a necessity. The arrangements now in progress for other Theatres will come into the report for January, and I will not go into them now, as they are not completed, and take much time and tedious negociating. The announcement that the tea is served is made in the Programme at the Casino and some of the merits of India and Ceylon teas are referred to.

AT THE CALL OF MRS. GRANNIS.

A convention was summoned by Mrs. Grannis and ladies from all parts of the States assembled at her home, delegates coming from Montana, Florida, California, etc. some 30 ladies in all. Mrs. Grannis met me by accident and told me of this, so with her permission I sent Mrs. Tiptou and the colored girl to her house and had the tea served to the delegates. Mrs. Tipton reported the result as a great success, and that Mrs. Grannis had herself spoken to the people about the tea, referred to assistance I had

given her (I had helped to put up and decorate her booth at the food show myself, and had been at her call there) she enumerated the places and clubs where the tea had been served by us and then introduced Mrs. Tipton to give her regular tea talk. The ladies individually spoke to Mrs. Tipton afterwards asking where the tea could be had etc., so the next day I sent some of the packets round to be distributed by Mrs. Grannis to these ladies together with list of grocers.

PRINTED MATTER WANTED.

On occasions like this I miss the advantage I could take of suitable printed matter, giving some particulars about tea and its manufacture etc. If the Committee have any such matter in type, it would be easy to get a stereotype or cast for me, and I could have a few printed as required, at a small cost. Even the leaflet Mr. Mackenzie is having printed, or will have printed at some time would be useful if it included India. I must say, however, I would like something more interesting with many more cuts and less telegraphic in form.—*Indian Planters' Gazette*, Feb. 29.

THE COFFEE INDUSTRY IN HAWAII.

Coffee planting is making steady progress in these islands, and as the young trees come into bearing, as they are now beginning to do, the area will be rapidly extended. Thrum's Almanac for 1896 gives a table showing the parties engaged in this business, the extent of land cleaned and planted and the acreage of trees in bearing. The area shown as devoted to coffee comprises 4,806 acres. There are a few names and areas omitted, however, and the actual extent probably exceeds 5,000 acres. Within three years the whole of this will be in bearing, and giving crops which will show an increased yield each succeeding year, as the trees grow larger.

The average number of bearing trees to the acre is not over 500 in the best fields, and where forest trees are left standing for shade, the number of coffee trees is even less than that. Many more trees may have been planted, but in estimating for crops, it is safer to figure low. Even this area, with all its trees in good condition and bearing well, should return to the growers not less than 2,000,000 pounds annually, which will figure among the exports within a very few years. And this will only be the commencement of an industry which will continue to grow year by year, should no disaster overtake it. And yet there is room for hundreds of new coffee plantations.

Strangers frequently inquire regarding coffee land, and where is the best place to locate. As most of the coffee growers locate on Hawaii, it gives the impression to many that Hawaii is the only island in this group where coffee will flourish. There is just as good land, though of much less area, on Oahu, Kauai, Maui or Molokai as on Hawaii, and with this advantage that it is more accessible, especially when located on Oahu. We are glad to learn that a plantation is to be started at Makaha, which is about four miles beyond Waianae village on the line of the Oahu railway, and within two hours' ride from this city. Messrs. F. B. McStocker, J. A. Lowe and W. H. Hoogs are the promoters of this enterprise. Coffee is found growing in most of the valleys along the Walanae range of mountains, and also in those of the Koolau range on Oahu. One of the finest coffee plantations that we have ever seen was in the Hanalei valley on Kauai, cultivated by Charles Titcomb and later by Godfrey Rhodes, the latter gentleman being now in the city. Some years later the blight appeared in Hanalei and the valley was abandoned to sugar cane, which in turn gave way to rice. That was long before the lady bird proclaimed herself as the friend of the coffee and fruit grower. With her assistance, coffee may now be successfully grown in any part of this group wherever suitable land and moisture are found. But, like every other agricultural enterprise, it takes time, patience and capital to develope a successful coffee, sugar or orange plantation here or anywhere else.—*Planters' Monthly*, January.

FOR A DUTY ON TEA.

THE IMPOSITION OF A DUTY ON TEA BEING ADVOCATED BY THE COMMITTEE ON TEA TRADE OF THE UNITED STATES.

We, the undersigned committee, representing of tea trade of the United States, beg to make the following recommendation :

That a specific duty be imposed upon importations of tea, sufficient to correct certain evils which cannot be avoided under present regulations.

Heretofore, when the subject of duty on tea has been suggested, it has generally been opposed with the fiction of the "free breakfast table" by some who have not understood the subject and the conditions which affect the production, distribution and consumption of tea. The fact is, the removal of the duty on tea has been a positive injury to the consumer, because of the poorer quality which has been imported since then.

The Bureau of Statistics at Washington shows that in 1873 the average import price of tea was double the price of today and the consumption per capita 1.53 pounds, since which time the average quality and price have steadily declined, together with the consumption, which is now only 1.34 pounds per capita. The consumer pays the retailer nearly as much today for a pound of tea as he paid in 1873 and receives a much inferior quality, which accounts for the falling-off in consumption. In contrast with this we find that in all countries where there is a tax on tea, the consumption per capita has increased, most notably in England where the consumption has increased within the last twenty-five years from 3.63 to 5.53 per capita.

In England, where the duty is 8 cents per pound and the consumer gets better value for the same money, the consumption is four times greater than in the United States, where there is no duty. The average price of tea at retail throughout this country is about 50 cents per pound and considering that one pound of good tea will make over 200 cups, giving four cups of tea for 1 cent, it will be seen that good tea is an enonomical beverage. The difference in value to the consumer between good tea and poor tea is very much greater than the public realizes.

Some twelve years ago, Congress, upon the recommendation of the tea trade, passed a bill excluding adulterated and exhausted tea. Although the bill has been of advantage, it has not prevented the importation of large quantities of poor tea. Duty is the only real safeguard; its imposition, as has been proven by experience, would retard the importation of poor quality by American merchants and at the same time prevent native shippers in the producing countries from exporting to this country, where there is no duty, the inferior and trashy teas they cannot send elsewhere.

The Russian Government imposes a duty of 45 cents gold per pound, and it is a well-known fact that the people of Russia receive the best tea of any people in the world. The duty on tea in France is equal to 21 cents, Germany 11 cents, Austria-Hungary 20 cents, Spain 28 cents, Portugal 48 cents, Norway 24 cents and England, a free-trade country, collects a duty of 8 cents per pound, not only from tea imported from China and Japan, but the same duty from her own colonies, India and Ceylon.

Worthy of mention in this connection is an article by Mr. Stanton, of Gow, Wilson & Stanton, London, one of the leading firms importing teas from British colonies, which was read before the Society of Arts, January 23, 1895, in which he states that no tax was more cheerfully paid, or more imperceptible in its weight than the duty on tea. Sir Henry Peek, baronet, confirmed Mr. Stanton's remarks and showed that the duty collected from tea in 1894 has amounted to £3,499,000, equivalent to about $17,000,000, sufficient to provide the country with four new war-ships.

In conclusion, our Government would obtain considerable revenue from a tax which is recognized, by all governments imposing a duty on tea, as the most satisfactory tax that has ever been levied, and when the consumer can obtain a better quality of tea for his money, we believe the consumption within a few years will increase very largely, thus benefitting the consumer, the trade and the government.

(Signed)

COMMITTEE OF TEA TRADE OF UNITED STATES.

By Geo. H. Macy, Secretary.

The foregoing is a synopsis of arguments being used by those advocating the placing of the duty on tea.—*Interstate Grocer.*

THE TEA TRADE OF WENCHOW.

A despatch, dated January 21, has been received from the Foreign Office, enclosing copy of a report on the Wenchow tea trade by Mr. Fox, Acting Consul at Wenchow, as follows :—

" The export of tea from Wenchow, hitherto insignificant, has increased so rapidly during the last three years that a few notes on the conduct of the trade and its chances of development should be of interest to British merchants.

For many years after the opening of the port to foreign trade (in 1877), the tea grown in this district was sent, in an unprepared state, either overland to Foochow, or by junk and steamer to Shanghai and Hankow. At these places it was mixed with other teas, losing both its name and distinctive flavour. The trade was entirely in the hands of Chinese merchants, who, with limited capital, bought only small quantities at a time, being unwilling to pay out either the large sums for the cost of conveyance to Shanghai or the coast trade duty levied there. This latter charge was in the nature of an advance, the amount being refunded to the merchant on re-shipment abroad. However, an arrangement was made in 1891 by which a bond was deposited by the owner of the steamer carrying the tea in lieu of the duty referred to above.

From this time forth the export of tea to Shanghai gradually increased. In 1893 a tea firing "hong" was established, and green teas (Gunpowder, Imperial, and Young Hyson) appear for the first time in the Customs' Export Returns. There are now (1895) five tea-firing establishments in Wenchow, and the export of tea (black, green, and unfired) has exactly doubled since 1893, the figures being 2,668,933 lb. for 1895 as against 1,381,600 lb. for 1893, a sufficiently remarkable result when compared with the stagnant state of the trade in old established tea ports, like Foochow, Amoy, and Canton. The following table will show the increase under the different headings since 1891.

Quantity.

Year.	Black (Congou). Lb.	Green and other kinds. Lb.	Unfired. Lb.	Total. Lb.
1891	313,733	10,667	582,533	906,933
1892	401,200	4,133	620,133	1,025,466
1893	530,133	—	851,467	1,381,600
1894	412,800	35,467	1,201,867	1,650,134
1895	476,534	679,210	1,513,120	2,668,933

The prices in Wenchow this year were good, and some of the merchants have made large profits Black tea averaged from 14 to 16 dols. (best congou 25 dols.) per picul; green, from 13 to 15 dols. (best gunpowder 50 dols. per picul).

Tea can be prepared at less cost in Wenchow than many other places, owing to the cheapness of labour and the abundance of charcoal. Freight to Shanghai, owing to the monoply of a Chinese steamship company, is at present excessive, but the competition which must inevitably come, should the trade of the port continue to increase, will effectually remedy this evil.

The time has certainly arrived for at least one British firm to establish a branch in Wenchow and buy teas locally. The expenses connected with coolie and cargo boat hire, godown, and packing charges are much lighter than in Shanghai and other places, the tea-growing districts are close at hand and easy of access. The Chinese dealers will be only too glad to sell their tea on the spot, instead of waiting for their profits till it is sold in foreign markets. The quality of the tea is good and likely to improve. The superior kinds have already been favourably commented on by connoisseurs. There is, therefore, a good opening at the present time for foreign enterprise in Wenchow, and it is to be hoped that British merchants will be the first to take advantage of the situation.—*Board of Trade Journal.*

CENTRAL TEA FACTORIES IN THE NILGIRIS.

Cheapness of production is a factor of the utmost importance in the cultivation of tea, as every one will readily admit. But beyond granting the truth of the axiom, so trite as to be almost needless to insist upon, how many have given really serious consideration to plans for effecting the reduction in cost aimed at. It is beyond all dispute that small independent gardens in Upper India generally, in Ceylon and also in Southern India will be the first to go to the wall. Writing on the vexatious restrictions to the cultivation of large areas of tea on the waste-lands of Upper India, newly introduced by the Government, in limiting individual grants to 1,500 acres, our Calcutta contemporary, the *Planter*, says: "Little planters, like little men in all industries, at home and abroad, are going to the wall and seeking absorption in large companies with plenty of capital. It is unpicturesque; it is cruel, it is perhaps unjust, but it is the fact."

Dealing more directly with the question as it effects the Nilgiris, what do we find? Small and scattered areas, independent factories on each garden, high cost of production and worst of all, a low London average price. Now it is perfectly possible by means of combination to radically alter the last two drawbacks. Let all estates within say, a five-mile radius, agree to start a central factory and have all their leaf manufactured therein by the best man that money can procure. We are extremely loth to hurt the feelings of any of our readers, but we venture to think that Nilgiri tea should, if made in the latest approved methods, compare favourably with the bulk of Darjeelings and the best of Ceylon. In our small local factories the appliances and machinery are still in many cases, primitive to a degree. In addition to this, many tea-planters are also more or less interested in coffee, and consequently can give only a portion of their attention to the extremely important details of cultivation and manufacture. It were therefore absurd to suppose that teas of any high quality could be produced under these conditions.

Now this could be all changed by the adoption of central factories. If water-power were available, the factory should be installed there. If not, one of the existent factories could be enlarged and altered so as to suit the new requirements. The manner of arranging this matter seems very complicated at first sight, but is in reality simple enough. Supposing an existent factory be chosen, the value must be fixed by arbitration, and the amount, together with the cost of the improvements required, should be distributed among the shareholders, *i.e.*, the owners of the various gardens in proportion to thoir yield or acreage. Should it be convenient, the original owner of the factory might arrange to accept a lien on the profits or even the estates, in lieu of cash payments. This being arranged, every owner of a contributory garden becomes part owner of the central factory.

We have left, however, what we think to be the most important part of the scheme, to the last. The best of buildings, the latest types of machinery are all good in their way and will of themselves largely reduce the cost of production. But like all factories, they want skilled supervision, and no money should be spared in obtaining the services of the best tea-maker available in Darjeeling or Ceylon, of proved capabilities and long experience in districts similar to these Nilgiri Hills. It would be but of the slightest use in engaging a man of average capabilities even though he hailed from Darjeeling or Ceylon. A man who could not rise above an average of 9*d.* for Hill teas is not the sort required. What is wanted is the best tea-maker to

be got in reason, say for anything under one thousand rupees a month. It seems a great deal to pay for a tea-maker alone, but in reality it works down to very little. Supposing an average of only even 500 acres of tea were attached to the central factory, and putting the yield at 250 lb. per acre, even R1,000 a month would only mean a charge of about one anna and six pies per pound. A man at this salary should be able to obtain a 1ld. average for every pound of tea manufactured, which would easily pay his charges, and still leave a very handsome profit to the shareholders. In addition to this the cheaper cost of manufacture would very appreciably lessen this tax. Besides attending strictly to the manufacture, he would be able to place his experience of the latest and best methods of cultivation at the disposal of his employers.

Now let us see how this will affect the owners of the small gardens affiliated to the central factory. In the first place he is asked to contribute a round little sum in cash for his share in the factory, or also make an arrangement if possible to deduct this sum from the amount realised by the sale of his teas, giving as security a lien on his estate for the amount. It does not seem too sanguine to expect that if the arrangement were carried over two years, the *increased* profits alone (*i.e.*, the difference in profit between his former workings and the central factory scheme) would clear off his debt, and the third year he would have very materially increased his yearly income. By allowing the two years for payment of his share, his receipts for that space of time would be as usual and no inconvenience felt through want of funds for cultivation, etc.

This plan has been sketched out very roughly, but we venture to think that at bottom the scheme is sound enough, though of course as a working basis for a business undertaking a great deal of elaboration is required. The suggestion will not be acted on for many a long day yet, if at all, but even those who will decide the possibility of such a scheme being practicable, must acknowledge the great need to which its publication is intended to draw attention. —*Planting Opinion.*

TEA AND EXPERTS.

(Communicated.)

In a daily contemporary lately we have seen defence and defiance in the shape of Mr. Bamber's letter and the editorial *in re* the benefits that the tea plant derives from the tree called the *sau* being intermingled throughout the plantations. In the first, Mr. Bamber claims the discovery, and in the second, the Hare Street paper stands up for Dr. George Watt, C.I.E. Some time ago we pointed out with regard to what may be termed a "so-called discovery" by the late Mr. Wood-Mason with regard to mosquito blight and quoted by Mr. Cotes, if we remember rightly, that this was no discovery by Mr. Wood-Mason, but simply the information he had picked up during his visit to Cachar to investigate mosquito blight and for the purpose of suggesting a "remedy." We then stated our views, and we stand to our guns, that the total discovery amounted to classifying the destroying insect and giving it an unpronounceable name; that with regard to its habits and mode of destroying the flush, the information was all supplied by the practical planter, and for the remedy we are still looking. Now with regard to the *sau* tree, we are of opinion that in the records of tea planting compiled by the late Mr. Wyman if we are not mistaken, mention will be found of the benefits accruing from planting the shrub amongst the tea. At any rate, before Mr. Bamber's advent on the scene the Hon'ble Mr. J. Buckingham called the attention of the Indian Tea Association to the *sau* tree, and its beneficial results when intermingled with tea, and one estate we have in our mind's eye planted it over a large area, and this some ten years ago. Now, it cannot be supposed that so intelligent a body of men carry on tea plantations planted this tree for shade, as they are quite well aware of the disadvantages of shade. What then did they plant it for? We don't suppose for pleasure or philanthropy. Be this as it may, it is amusing to read the vapourings of our "authorities" sent to the districts for a definite purpose, and who simple return from their "pleasure trip" to impregnate the air with a long string of technical terms, expressive of what?—the pickings of practical planters' brains and only exhibiting the "exuberance of their own verbosity." What has Mr. Bamber's visit to the tea districts and research into the chemistry of tea manufacture done? Has it raised the price of tea in the districts he visited a fraction of a penny per pound? What has Dr. Watt's visit done with regard to blight? Echo answers "What?" Up to date the planter has had to rely entirely on his own efforts, and so far as we can see is likely to have to do so in future. Those who in their enthusiasm ventured to think there was a millenium coming when they heard that a Government officer had been appointed to investigate their troubles, had better "bide a wee" and still go on in their old groove and act on the great principle of Smiles' "Self Help."—*Indian Planters' Gazette*, Feb. 29.

THE PROPOSED DUTY ON TEA IN THE UNITED STATES.

A movement has been set on foot in New York, recently among importers of tea to urge upon the Ways and Means Committee of the House, the levying of a duty of 10 to 15 cents per pound upon tea. It is urged that a satisfactory duty should be imposed upon tea, sufficient to correct certain evils which cannot be avoided under the present regulations. As tea is now free of duty it is held that all of the low grades of tea produced naturally seek this market, whereas if a specific duty were levied upon teas, that then the higher grades would be imported to the advantage of consumers, and the lower grades excluded owing to the relatively greater proportion that a specific duty would bear to the cost value of these lower grades. It is said that the average import price of tea was in 1873 double in price of today, that the consumption was then 1.53 pounds per capita and has since steadily declined until at present it is but 1.34 pounds per capita; that the consumer pays nearly as much today for a pound of tea as in 1873, and gets tea of inferior quality which accounts for the diminished consumption.

This effort on the part of the tea dealers to have themselves taxed, brings to mind the altruism of the distillers two years ago in their earnest efforts to have the tax increased on whiskey. The distillers had such great consideration for the government finances that they thought it wise to have the duty on whiskey increased some 25 per cent., not that it would enrich them to the extent of several million dollars by the increased value of the whiskey on hand, but because the government would secure the much needed increase in its revenues. The facts are that the duties at the low rates were paid on a very large amount of whiskey to avoid the increase under the new law—the Wilson Bill—and the revenues from this source were largely diminished.

In like manner we can see that the importers of tea are now far more interested in the increase in the value of the stock on hand, which would inure to their benefit if the duty were levied upon tea, than any protection of the American people from low grade teas by their proposed modes of exclusion.

Long experience has shown that in the United States the most deadly perfect article upon which to secure a competent revenue for the government is sugar. Any tariff levied upon this staple will produce a larger proportionate revenue than can be got from any other leading staple article. At the same time, any duty levied upon sugar would incidentally protect the existing American sugar industry, which is now able to supply some 15 per cent of the total amount of sugar consumed in the country and which is the one agricultural interest in which our country has thus far fallen behind Europe in its plans for legislative consideration and protection, and in which the largest possibilities now lie for Ameri-

can agriculturists north and south of Mason and Dixon's line. Nebraska, Colorado, Utah, California, Washington, and Arizona have before them wonderful possibilities in beet sugar production, while the whole tier of Gulf States can readily become enormous producers of sugar from tropical cane. If that consideration were given to the American sugar industry by our national legislature that is given to the sugar industry in France, Germany, and Austria, we should have it quickly placed on safe grounds and its rapid development made certain.—*Luisiana Planter and Sugar Manufacturer*, Feb. 8.

DISEASE AMONG COCONUT TREES.

TO THE EDITOR OF THE "TIMES" OF INDIA.

SIR,—Without pretending to be an expert in botany, I would like to inform my friend Dr. J. C. Lisboa what I know from one year's experience in this land of coconuts. I came here from Baroda in December 1094, and during this time I have seen many a coconut tree wither and die of the disease called *mandolim* in Goa; but here it goes by the nome of *kir*. I have seen here the gummy liquid that runs out from small slits in the tree, but not the yellow powder. The cause seems to be a worm that incessantly gnaws the pith of the luxriant plant with its metallic teeth. The remedy used here is a concoction of camphor and salt that the cultivator injects into a hole made just above the part affected. This place has a lovely grove of coconut trees extending between Bandora and Versova.—Yours, &c., H. PEREIRA.

Juvem, March 4th.

—*Times of India*, March 5th.

LIBERIAN COFFEE.

No 6. (Half-yearly.)

SINGAPORE, Dec. 31st, 1895.

CROPS.—From the Southern District of Johore, I am favoured with the following: "We have been busy the last three months (July to September) with crop, which has turned out well and has almost made up for the shortness of the crop in the earlier part of the year, which had been caused by the destruction of the blossoms by rain early in 1894. We have also had a series of good blossoms during this quarter of the year, a'l of which seem to have 'set,' those coming after the good blossoms of the early part of the year should ensure a good crop in 1896. We have had very little rain so far this year compared with the usual rainfall in this part, and the dry weather though favourable to outdoor work and curing of coffee is not altogether beneficial to the coffee plants themselves."

KLANG REPORTS :—	Piculs.
Total Klang District Coffee Exported in 1895	1,631·63
Total Coffee Exported from rest of Selangore	2,849·58
Total Exported from Selangore ..	4,481·21

"There are now fully 3,000 acres under coffee and owned by natives, and about 1,000 acres of this is owned in bearing and will give at least 3,000 piculs during 1696. About 1,000 acres have been opened by Europeans, of which 200 acres are in bearing. It is expected that from 1,500 to 2,000 acres more will be opened during 1896. High prices have been paid for coffee in bearing by natives, principally Chinese.

Coffee 2½ to 4½ years has parted hands at from $350 to $650 per acre, and it is reported that $700 per acre has been refused for some 5½ years old coffee. This season's crop has come in very slowly, but with the advent of fine weather a rush may be expected. Very good crops from Kuala Lumpur district estates are reported, 5 and 6 piculs per acre from comparatively young estates being obtained."

CROP PRODUCTION.—The following figures shew receipt of coffee in Singapore for each month of the 3rd and 4th quarter of 1895.

1895.	Piculs.
July	1,720
August	1,310
September	883
October	896
November	812
December	589
	6,183

MARKET.—Prices throughout the 3 months, July-September—remained steady at $42 to $43¼ the differences in value being chiefly due to quality of different parcels. October shewed little change at $42·50 to $43 20, but November opened with a spirited advance at $44½ finally reaching $45·50 which latter is the record for the period under review. Beginning of December shewed a decline at $45, closing value being $44½ steady.

J. LYALL, Coffee Broker, Change Alley, Singapore.

STATISTICS OF CINCHONA CULTIVATION IN INDIA.

AREA.

At the end of the official year 1894-95 there were 8,710 acres of land under cinchona cultivation, of which about 71 per cent was situated in Southern India, the remainder (nearly 28 per cent) being in Bengal. The area in Bengal, comprising 2,508 acres lies in and near Darjeeling. Most of the area in Southern India is in the Nilgiris and Malabar, thus: 2,409 acres in the Nilgiris, 1,902 acres in Travancore, 350 acres in Mysore, 33 in Coorg, 25 in Cochin, and 40 in Madura.

In Bengal the land under cinchona was in the main planted and is maintained by Government, the plantations of the State covering 2,351 acres. In the Madras Presidency on the other hand the industry has lain to much the largest extent in private hands, the State plantations covering only 821 acres.

During the ten years ending with 1894-95, the area under cinchona has fallen from 10,418 acres to 8,710 acres. There has been a substantial decline in Bengal, and in Coorg the cultivation has been almost entirely abandoned. The area in the Madras districts has fluctuated greatly.

The number of plants in permanent plantations has fallen in the same period from 17¼ millions to 9¾ millions. In 1894-95, a little over 7 millions were classed as mature, and nearly 2⅝ millions as immature plants.

PRODUCTION OF BARK.

The quantity of bark collected has largely increased. But, so far as the figures relate to Southern India, they have evidently been greatly uuderstated, as they are in every year smaller than the quantities recorded as exported thence to countries out of India. In Bengal practically all the bark produced is manufactured by Government into febrifuge and sulphate of quinine and issued to medical stores and hospitals or sold to the public :—

	Bark Collected.		Exports.	
	Madras.*	Bengal.	Madras.†	Bengal.
	lb.	lb.	lb.	lb.
1885-86 ..	344,158	223,010	819,742	7,298
1886-87 ..	750,478	255,631	1,252,328	32,881
1887-88 ..	856,316	342,410	1,397,919	51,394
1888-89 ..	1,140,302	445,100	3,042,084	32,006
1889-90 ..	827,881	420,705	1,854,632	..
1890-91 ..	1,656,872	416,272	2,984,126	11,719
1891-92 ..	1,473,204	435,569	2 692,251	1,608
1892-93 ..	2,065,177	459,232	2,813,637	..
1893-94 ...	1,170,801	338,025	1,665,647	..
1894-95 ..	1,449,947	577,682	1,728,418	8,900
Average..	1,173,514	391,363	2,028,078	14,581

*Including Travancore and Cochin.
†Including experts from Cochin.

COOLIES AND CONTRACTS.

The planters of Selangor have been making very strong representations to the Governor of the Straits Settlements on the Labour Question. Their greatest grievance is the fact that, under existing regulations, labourers can leave the service of their employers at a month's notice without settling their liabilities, unless bound by written contracts of service. It is admitted that employers have their civil remedy, but they urge that as, in the majority of cases, coolies' assets are nil, it is useless for employers to try to recover advances through the Civil Court. They submit that there can be no injustice in making it compulsory for coolies to either pay or work off their advances. The address proceeds:—

It is claimed that written contracts obviate this difficulty, but we are of opinion that such contracts are utterly opposed to the spirit of free operations as binding the labourer to work for a fixed period exceeding a month, and we know that they are exceedingly unpalatable to the coolies themselves. We would have our labourers free to leave us at a month's notice if they choose, and if we cannot so identify our interests with theirs as to make it to their obvious advantage to stay with us; but we ask that this freedom with regard to their movements should be contingent upon the proper settlement of their just liabilities, and we quote the instance of Ceylon where this principle is most strongly insisted upon by planters and recognised as equitable by the Ceylon Government. We sincerely trust that Your Excellency will see fit to meet our views in this connection before the new Labour Code becomes law.

Sir Charles Mitchell's reply was not very encouraging to the writers. Whilst sympathising with the difficulty experienced by planters in being unable to compel their labourers, if engaged on verbal monthly contracts, to either work or pay off their advances, H.E. held out no hope whatever that the relief asked for would be granted. He contended that the case of Ceylon, which had been quoted as a precedent, was no precedent at all, that Government always having had trouble over the labour question. And he assured the deputation that the matter had been thoroughly threshed out, and that the law officers of the Colony were very strong against connecting the element of criminality with breach of verbal contracts of service.

It is needless to say that this particular matter has been a subject of peculiar difficulty in British North Borneo. The local industry chiefly affected is woodcutting, and, unfortunately, only certain races care to undertake that sort of work. Tamils will not do it, and but few Chinese, while Japanese are equally averse to it if required to reside at any distance from the settlements. Banjerese, Sooloos, and others belonging the Malayan races are alone willing to make to their homes in the jungle for the necessary periods. But though excellent woodmen they are careless and absolutely unprincipled as regards money matters. They keep no accounts, and will deny the receipt of advances, food, &c., &c., in the most barefaced manner, in spite of absolute proof that they are speaking untruths.

To the suggestion that but very small advances should be given and that the labourers should not be allowed to run into debt, employers rejoin that, under such conditions, labour is unprocurable. They say that a large advance, and the certainty of always getting food and money, no matter whether the debt be paid off or not, is the only arrangement which tempts the shiftless native to sacrifice his independence and undertake regular work.

There is a good deal of truth in this assertion, but employers themselves might do much to break down a bad system if they would agree to work in concert. Were it thoroughly understood that *nobody* would advance more than a small sum easily repayable, and fix a fair limit to the amount of food and cash advanced during each month, from which there would be no departure by anyone, much of the difficulty would disappear. Nothing seems more strange to those familiar with complaints by and against woodcutting labourers than the fact that no two men seem to eat the same amount of rice or receive the the same amount of cash during any given month. Were some such arrangement as above indicated made, it would immensely simplify the work of Magistrates and others who have to decide the numerous differences arising between employer and employed. Concerted action however would be necessary to carry this out, and the question is whether that can or will be adopted.—*British North Borneo Herald*, Feb. 16.

THE KELANI TEA GARDEN COMPANY, LIMITED.

The first general meeting of the Kelani Tea Garden Company, Limited, was held on 12th March at the registered office in Baillie Street. Mr. H. Creasy presided, and the others present were Messrs. G. J. Jameson, W. Shakespeare, H. M. Waldock, and W. Seale.

The notice calling the meeting was read by Mr. Jameson.

THE REPORT

for the past half-year was taken as read. It is as follows:—

Acreage:

282	acres	in full bearing.
6	do	ravines and swamps.
5	do	grass.
295	do	reserve and jungle mostly available for Tea.
588	acres.	

Of the reserve 37 acres are in course of being planted, and it is intended to open up to 100 acres during the year.

The Directors have pleasure in submitting to the Shareholders, the accounts of the Company for the past six months.

The Crop secured amounted to 85,675 lb. realizing R36,298·42, or an average price of 42·35 cents per lb., as against an expenditure (exclusive of items under Capital Account and Profit on Rice) of R20,824·97, or an average cost of 24·30 cents per lb.

The balance at credit of Profit and Loss account after making provision for

Depreciation on Buildings and Machinery	R2,702	57
Preliminary expenses in the formation of the Company	3,088	78
Stationery and Postages, &c. ..	74	40
Auditor's fee and management expenses	1,550	00
	7,415	75
Less Transfer Fees and Interest ..	98	14
Total ..	R7,317	61

amounts to R8,255·84, which sum the Directors recommend being dealt with as follows:—

R5,000 to a fund for extension purposes.
R3,255·84 to next account.

The Estimated Crop for 1896 is 180,000 lb.

The appointment of Directors and Auditor will rest with the meeting.

Carson & Co.,
Agents and Secretaries.

On the motion of Mr. Seale, seconded by Mr. Shakespeare, the report was adopted.

On the motion of Mr. Waldock, seconded by Mr. Seale, the retiring Directors were re-elected.

On the motion of Mr. Seale, seconded by Mr. Shakespeare, Mr. F. W. Waldock was elected as Auditor at R50 for each audit.

With a vote of thanks to the chair, moved by Mr. Waldock, the meeting terminated.

SA TREE IN TEA CULTIVATION.

TO THE EDITOR.

Sir,—In your issue of December appeared an account of Dr. Watt's (the Reporter on Economic Products to the Government of India) recent visit to Assam for the purpose of investigating tea blights, &c. In this account I noticed that Dr. Watt claims to have made a discovery of no small importance, which

would necessitate his amending the review of the literature on the subject in Europe. The discovery is briefly this:—Some years ago on certain tea gardens in Assam the "Sa" tree (Albizzia stipulata) belonging to the sub-order Mimoseæ of the group of leguminosæ, was planted for shade purposes among the tea bushes. This sub-order was not known to produce the root tubercles, which contain nitrogen-feeding bacilli, and which make several other sub-orders of the leguminosæ so valuable in enriching soil with nitrogen, by their means. It was demonstrated to Dr. Watt that the effect of the shade was to lower the quality of the tea, while it increased the out-turn. To account for this increase, a young "Sa" tree was dug up, and examined by Dr. Watt, who observed that the roots were covered with multitudes of the tubercles, and further, that under the microscope these were actually found to contain the nitrogen-feeding bacilli. From this discovery he was led to the practical consideration, which he now regards as almost of supreme moment to the tea industry, that the cultivation of a herbaceous leguminous plant to be hoed in as green manure, would secure the strength to resist many blights, without entailing the disadvantage of the shade given by the "Sa." Dr. Watt accordingly recommended the Assam planters to sow in October and hoe in about February, a crop of matti kalai, or some other of the numerous pulse crops common to the neighbourhood.

If you will kindly allow me I should like to draw attention to the fact that the discovery in question was made by me in 1892 in support of which I subjoin a few extracts from my book on the Chemistry and Agriculture of Tea published in 1893 by the Indian Tea Association. I may mention that while conducting my experiments in Assam (as Chemist to the Indian Tea Association), on a garden almost adjoining the one on which Dr. Watt made the discovery I had frequently pointed out to planters the effect of the "Sa" as a nitrogen producer for tea, the beneficial effect being at once apparent from the dark green colour of the leaves and the healthy growth of the tea plants beneath them. When visiting one of the gardens near Jorhat, the question of the "Sa" tree arose, and I obtained one of the trees, on which were the tubercles as described by Dr. Watt. On microscopical examination these contained certain bacilli, but as I had no means of obtaining pure cultivation of them, it was impossible on mere microscopical observation, to state absolutely that the bacilli in question were identical with the nitrogen feeding bacilli observed in Europe, although from the effect of the plant I have no doubt they were so.

The following extracts from the book above mentioned, will show that the subject has been previously brought to the notice of planters and others concerned in tea (page 142 lines 1-10):—"Numerous experiments and investigations have been made to determine whether plants had the power of utilising the free nitrogen of the air, and it has been found that certain orders of plants have that power of utilising the free nitrogen of the air, and it has been found that certain orders of plants have that power, free nitrogen being fixed by the agency of certain bacteroids which occur in nodules on the roots of plants. This discovery explained why certain plants enriched the soil by their growth even when the crop was removed, the roots containing a large portion of the nitrogen stored up in the above manner, which was liberated again as ammonia on their decomposition; this ammonia could then be utilised by other plants, which had not the power of fixing free nitrogen." Again on pages 147-148, when treating of the sources from which the nitrogenous compounds of plants derive their nitrogen:—"In some cases it (nitrogen) is also derived from the free nitrogen of the atmosphere, which certain plants have the power of fixing and utilising by means of bacteroids in nodules on their roots." (Page 178, lines 12-25):—"It is a curious fact that tea garden jungle in any district rarely contains plants of the Natural Order "Leguminosæ" as the clover or gram, perhaps partially due to all tea soils containing such a small proportion of lime. Trees of this order as the "Sau" (Sa) have been planted among tea in some gardens, as it was originally noticed that its presence appeared to have a beneficial effect on the bushes, but it is now being generally removed, as its shade has been found detrimental to outturn to a great extent, and counterbalances any other benefit derived from its use. A great advantage would, I think, be gained if the jungle growth could be gradually and economically changed to the above natural order, as its powers of enriching soils with nitrogen which it derives indirectly from the atmosphere would make it the cheapest means of supplying that useful and necessary constituent to the tea." (Page 181, 7 lines from bottom):—"The growth of other classes of weeds of a different natural order to the graminaceæ or grasses is an advantage during the cold weather, as they are gradually accumulating from the atmosphere, at a time when the tea plant is practically dormant, large quantities of carbonic acid and some nitrogen, which, when tho weeds are buried and decomposed, are again liberated for the use of the tea."

I should have laid more stress on the subject of "Sa" trees in the above book, but for the fact that on nearly every garden I visited, on which the tree had been originally planted for shade purpose, it was being cut down and removed owing to the detrimental effect of its shade on the quality of th tea produced beneath it. (Page 210.) As regards Dr. Watt's suggestion to planters to grow mattikalai or some other of the numerous pulse crops common to the neighbourhood in my first report published in 1891, after a short tour in Cachar and Assam, I recommended the use of four leguminous plants for experimental green manuring viz:—Ground-nut (Arachis hypogœa), gram (Cicer arietimun), field pea (Pisum arvense) and lentel (Ervum lens) also to certain planters, during my tour in Cachar the growth of "matikalai," which, I was informed, yielded the largest amount of green leafy material (for manurial purposes) of the pulse crops grown in the districts.

M. Kelway Bamber.

Muktesar, Kumaon, Jan. 27.

—*Indian Agriculturist*, March 2.

DRUG REPORT.

(From the *Chemist and Druggist.*)

42 Cannon Street, E.C., Feb. 20.

Caffeine is very quiet at 18s per lb. The market, especially in America, seems to be a little over-supplied.

Calumba remains quite dull. About 55 bales ordinary dark sold at 8s 6d per cwt. subject to approval.

Coca-leaves. Five cases common dark and damaged leaves sold without reserve today at the comparatively high figure of 7½d per lb.

Cocculus Indicus—Tending lower; 30 bags were bought in today at 8s 6d per lb.

Nux Vomica remains very low in price. Thirty-eight bags fair small to medium pale seed realised 6s per cwt. while a parcel of 547 bags from Madras and Calcutta was bought in at 4s 6d per cwt.

Oils (Essential)—Two cases, described as Cinnamon bark oil of first quality, sold today at 7d per oz., an exceptionally low figure, if the statement in the catalogue be true. Another parcel of two cases fair cinnamon oil was priced at 8d per oz. Citronella oil 2s per lb. on the spot, or 1s 9d per lb. c.i.f. for June shipment. Lemon-grass oil tending a little firmer: spot 2⅞d per oz. asked: for shipment 2⅝d c.i.f. per oz. for near-at-hand, and 2½d per oz. c.i.f. for distant shipment.

Amsterdam Cinchona Telegram.—Our Amsterdam correspondent, telegraphing on Thursday night, states, that at the cinchona auctions held in his city today, 6,251 pkgs. of Java cinchona (out of 8,840 packages offered) sold at an average unit of 2·82c. per half-kilo. for the manufacturing bark, a decline of 0·18c., or, say, 6 per cent upon the January auctions, chiefly to the excessive quantities of bark placed on sale. The principal buyers were:—G. Briegleb (American and English makers), who bought the equivalent of 7,223 kilos. of sulphate of quinine, the Auerbach works 3,678 kilos, the Brunswick factory 3,495 kilos., the Mannheim and Amsterdam works 8,261 kilos, the Frankfort-on-Main and Stuttgart works, 1,727 kilos, and various buyers 2,708 kilos. The range of prices was: Druggist barks 5½c. to 32½c. (= 1d to 5½d per lb.) manufacturing barks 6c to 76½c. (= 1⅛d to 1s 3½d per lb.)—*Chemist and Druggist.*

BRITISH BORNEO PLANTING NOTES.

The Byte December crop of parchment coffee, necessarily omitted from our returns of the 1st January, was piculs 103·25 totalling piculs 358·54, obtained from an area estimated at about 170 acres during six months. Thus is a shade over piculs 2 per acre for that period, which is a very fair result to obtain from trees of about three years of age considering that the seedlings when planted were some three or four months younger than is customary. The Kabeli crop for the same period was piculs 62·33 the trees being some six months younger on the average and the area about 60 acres. Seedlings when planted also under age.

From all sides we hear very encouraging accounts of the coffee. The last put-in plants are coming up stout and strong, older ones are shaping into very handsome trees, and more and more crop is collected every month. Even the old Sebooga, planted in 1884, deserted almost as soon as planted and most of the young plants trodden out by elephants and wild cattle, and its very whereabouts lost for years, is coming to the fore again; it gave something like a picul and a half of parchment for the month of December in repayment for a very little trouble in clearing up round the feet of the fine, strong, but very badly shaped trees. From all the estates an increase is expected for the month of January.—*British North Borneo Herald*, Feb. 16.

RUANWELLA TEA CO., LTD.

At the first annual ordinary general meeting of the Ruanwella Tea Co., Ltd., held on 14th March the report and accounts, as published, were adopted. There were present:—Messrs. A. M. White (in the chair), E. S. Anderson, G. W. Carlyon, Directors; L. E. Edwards, C. J. Donald, A. Thomson (by his attorney Mr. G. W. Carlyon), and F. G. A. Lane (by his proxy Mr. G. W. Carlyon). The report is as follows:—

ACREAGE.

Tea in full bearing	.. ..	313 Acres.
,, not in bearing	.. ..	45 ,,
Jungle and Waste land	..	215 ,,
Total	..	573 ,,

The Directors have pleasure in presenting to the shareholders the accounts of the Company for December, 1895, from the 1st of which month the estate was taken over.

After providing for all expenses incidental to the formation of the Company, a balance of R251·87 appears at debit of profit and loss, which amount has been carried forward to the current year's accounts.

The estimated outlay on working account in 1896 is R36,742·50 against an estimated crop of 160,000 lb. tea. In the valuation obtained by the Company before purchasing the estate allowance was made for the cost of extension to the factory and new machinery, and in this connection it is proposed to spend R14,750 this year. Arrangements have been made for planting 30 acres jungle in tea this season, and ample nurseries of high jât Indian seed have been prepared. The cost in 1896 of this extension is estimated at R4,920.

The appointment of an Auditor for the current season will rest with the meeting.—By order of the Directors, Whittall & Co., Agents and Secretaries.

KIRKLEES ESTATE COMPANY, LTD.

At the annual ordinary general meeting of the Kirklees Estate Company, Ltd., held on 14th March the Report and accounts as published were adopted and a dividend of 12½ per cent for 1895 was declared. There were present:—Messrs. G. W. Carlyon and G. H. Alston, J. Armitage Ogden, and C. J. Donald (Directors), Mr. Jno. Gordon (by his proxy Mr. G. W. Carlyon), Mrs. E. Armitage Ogden (by her proxy Mr. J. Armitage Ogden), Mr. A. Thomson (by his Attorney Mr. G. W. Carlyon), and Misses Clarke and Jumeaux, Misses Armitage, Mrs. J. Booth and Mr. C. Jumeaux (by their Attorney Mr. J. Ogden).

THE REPORT

is as follows:—

ACREAGE OF KIRKLEES ESTATE.

Tea in bearing	.. ..	200 acres
,, ,, partial bearing	..	82 ,,
,, not in bearing ..	..	50 ,,
Total Tea..		332 acres
Cardamoms	.. ..	21 ,,
Coffee	.. ..	36 ,,
Timber and Uncultivated Land		325 ,,
		717 acres

The Directors have pleasure in submitting to the Shareholders the accounts of the Company for the past year.

The crops secured in the year were 63,851 lb. Tea, 314 bushels Coffee and 613 lb. Cardamoms. The average net prices realised were 51¾ cents per lb. for the Tea, R15·28 per bushel for the Coffee and R1·21 per lb. for the Cardamoms.

After making ample provision for depreciation of buildings and machinery and writing off the whole of the preliminary expenses (R892·81) the net profit for the year amounted to R14,041·57, or about 14 per cent on the capital of the Company, The Directors now recommend the payment of a dividend of 12½ per cent for the year, leaving a balance of R1,541·57 to be carried forward to the current season's account.

The estimates for this year are 75,000 lb. Tea, 150 bushles Coffee, and 1,000 lb. Cardamoms, on an expenditure of R27,673.

The estimate of expenditure on capital account is R7,700, which provides for the upkeep of the 48 acres not in bearing and the planting up of a new clearing of 40 acres.

In terms of the articles of Association all the Directors now retire from office, but are elibible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.—By order of the Directors, Whittall & Co., Agents and Secretaries.

THE UDABAGE COMPANY, LIMITED.

The first general meeting of shareholders of the Udabage Company, Limited, was held on 14th March at the registered office, No. 21, Baillie Street. Mr. G. J. Jameson presided, and there were present Messrs. E. B. Dawson and W. Shakespeare.

THE REPORT.

The following report was submitted by the Provisional Directors:—

ACREAGE:

		A.	R.	P.
Tea in bearing	.. ..	210	0	5
Planted in 1894	.. ..	6	0	0
,, 1895	.. ..	7	3	33
		223	3	38
Jungle, &c., mostly available for Tea	.. ..	131	0	20
		355	0	18

The Directors have to report that since the formation of the Company, a block of 66 acres 1 rood was purchased at Government sale at R25 per acre, and is now included in the acreage of the Company's property.

It is intended to open 100 acres this season, of which 60 acres have already been felled.

In order to commence the financial year on the 1st January, the Directors have made up the accounts to the 31st December last, which are now submitted, and from which it will be observed that after writing off the following items, viz.:—

Part preliminary expenses in connection with incorporation of the Company	R1,709	33
Interest..	91	48
Stationery, Printing, &c. ..	119	00
Management, expenses, &c. ..	637	50
	R2,557	31

There is a balance in Profit and Loss account of R1,221·74.

The Directors estimate, that after making provision for further expenses in connection with the Transfer of the Estate to the Company, amounting to about R250, there will be a balance of R971·74 to carry forward to next account, which, in view of the fact that the Capital of the Company was only subscribed in January, may be considered satisfactory in that the incorporation of the Company has cost the Shareholders practically nothing.

It will be necessary to elect Directors and Auditor at the Meeting. CARSON & Co.,
Agents and Secretaries.

On the motion of Mr. DAWSON, seconded by Mr. SHAKESPEARE, the report and accounts were adopted.

On the motion of Mr. DAWSON, seconded by Mr. SHAKESPEARE, the Provisional Directors—Messrs. J. N. Campbell, R. P. Hudson, and G. J. Jameson were re-elected Directors for this year.

Mr. F. W. Waldock was re-elected as Auditor, and this concluded the business of the meeting.

THE SELANGOR PLANTERS' ASSOCIATION.

Minutes of a general meeting of the Selangor Planters' Association, held on Saturday, 22nd February 1896, at 10-30 a.m.

Present :—Mr. E. V. Carey (Chairman), Mr. Tom Gibson (Hon. Secretary), Messrs. C. Meikel, E. B. Skinner and H. Huttenbach (Members of Committee), and Messrs. Lake, J. Glassford, R. Meikle, Walker, Nissen, Dougal, Christie, Hicks, Stonor, Tollemache and Allen ; Munro (visitor).

1. The notice calling the meeting was taken as read.

2. The minutes of last general meeting were read and confirmed.

3. The following gentlemen were elected members of the Association :—Messrs. T. North Christie, J. B. M. Leech, A. Lutyens, F. B. Hicks and M. S. Parry.

4. Read letter from Government Secretary in reply to suggestions from the Association *re* discharge tickets.

5. Read letter from Government Secretary, notifying that His Excellency the Governor had decided to refer to a Commission of five persons, consisting of the Resident Councillor, Penang, the Auditor-General, representative planters of Province Wellesley and Selangor, and an official from Perak, the following questions in connection with Indian Immigration :—

(1) What amendments it is desirable to make in Ordinance 16 of 1892, before bringing the same into operation ; (2) Whether any further action on the part of the Government (as distinguished from individual action by employer, of labour) is desirable to promote immigrations or to benefit immigrants ; and if so what action is recommended.

It was decided that Mr. E. V. Carey's name should be submitted to the Resident as the Selangor representative.

6. In the absence of Mr. Darby, Mr. Gibson proposed the resolution in his name :

"That the Government of Selangor be asked to reconsider Order No. 603 in the *Government Gazette* of 6th December, 1895, *re* sale of Government Medicines, and that the collection of payments for medicines dispensed at District Dispensaries and Hospitals be made quarterly as is now done in the case of accounts for Hospital patients."

This was seconded by Mr. Walker and carried unanimously.

7. The Annual Report for 1895, having been distributed to members present, was taken as read and adopted *nem. con.*

8. Mr. Carey, vacating the chair, intimated that there was a general feeling amongst members that it was desirable that the Committee should in future consist of five members instead of three, and on this being put to the meeting the motion was carried, the change being subject to confirmation of the next general meeting.

9. Mr. Carey proposed that Mr. C. Meikle seconded that Mr. Dougal take the chair *protem.*

10. A ballot for office bearers for 1896 was then held, with the following result :—Mr. E. V. Carey, Chairman, Mr. Tom Gibson, Hon. Sec., and Messrs. C. Meikle, E. B. Skinner, A. B. Lake, L. Dougal and A. Walker members of Committee.

11. The meeting terminated with a vote of thanks to the chair at 12-15 noon. THOS. GIBSON,
Hon. Secretary.

THE ANNUAL REPORT 1895.

GENTLEMEN,—In submitting this, the third Annual Report, your Committee are pleased to state that during the year thirteen new members have been enrolled upon the books of the Association, and the attached statistics show an increase of 3,546 acres under cultivation and of 1,240 labourers of all nationalities employed on estates.

Great as the above increase is, there is every reason to think that it will be dwarfed by comparison with 1896, judging from the reported large clearings contemplated in the Klang, Kajang, and Kuala Selangor Districts.

This result is most encouraging and clearly shows increased confidence in the planting enterprise on the part of the investing public ; and doubtless the good prices of $42·50 to $45, which have ruled steadily during the year, have much to do with it.

Besides the above acreage under European cultivation, a very large area is now planted with coffee by native holders all over the State, but particularly in Klang District, where it is estimated that not less than 3,000 acres are under native coffee, and the cultivation is extending rapidly.

MEETINGS.—During the year 1895, six general meetings and 11 committee meetings have been held, and as a rule were well attended. One extraordinary general meeting and one extraordinary committee meeting were also held during the year.

MR. CAREY'S VISIT TO INDIA AND REPORT ON SAME.—Early in the year the Chairman (Mr. Carey) having occasion to visit Southern India kindly offered in the interests of the Association to interview the officials of the Indian Emigration Department, and to make enquiries generally in connection with the recruiting of Tamil labour in that country. On his return to Selangor he submitted a lengthy and interesting report of his visit, which has been circulated amongst members. One thing in particular disclosed by the report was the fact that the main obstacle to the recruiting of free labour in India lay in an old Madras General Order dated 15th May, 1888, which contains a rule to the effect that no agent or recruiter shall receive any commission on coolies not entered in the list of indentured coolies.

With a view to having above restriction removed—or, at least, exceptions made in the cases of mercantile firms of standing—your Committee addressed the Government on the subject, and the outcome of this correspondence was a despatch from the Colonial Secretary, S.S., to Secretary to Government of India, Rev. and Agri. Dept., in which he says, that the Governor of the Straits Settlements, Sir C. Mitchell, hopes that the Government of India will secure for the congested districts of the Presidency of Madras, and the newly developed territory of the Protected States of the Malay Peninsula, the great boon of a free interchange of labour which will be highly

beneficial to both countries. If this step is likely to entail any long delay, then the Governor hopes that the request of the Selangor Planters' Association for a relaxation in the present law of recruiti g in Indian labour for the Straits Settlements may receive the early attention of the Madras Government.

DISCHARGE TICKET SYSTEM.—When this question was laid before Government last year no reply was received, but in October last a letter was addressed to the Association by the Government Secretary intimating that Government, although not prepared to pass a compulsory enactment, would be glad as an employer of labour to join in any equitable arrangement for the protection of employers against the wrongful employment of absconding labourers. Your Committee then submitted a form of rules which in their opinion would meet the case, but the Government Secretary in reply stated that the rules appeared to involve the passing of a compulsory legislative enactment; this the Government was unable to sanction, but would join the members of the Association in a mutual undertaking only to employ coolies in possesion of a discharge certificate. As, however, such an undertaking might prejudicially affect Selangor employers of labour as compared with those of the Colony and the other Native States, it would, in the opinion of Government, be advisable to defer taking any immediate further action in the matter—at all events, pending the Federation of the Protected Native States.

LABOUR CODE.—The Acting Resident having appointed a Committee to report on a proposal to adopt the Perak Labour Code in this State, the Chairman of the Labour Code Committee wrote asking your Committee to appoint a representative of the Association to meet the Labour Code Committee, and to give them the benefit of the views of the planting interest in Selangor on the subject. Mr. C. Meikle attended said meeting as representative of the Association.

UNITED PLANTERS' ASSOCIATION.—Your Committee are glad to state that the hope expressed in last annual report of forming a powerful Central Association for all the Native States is nearly accomplished, as it has been arranged to hold a general meeting of members of the Selangor, Sungei Ujong and Pera Associations in Kuala Lumpur at the time of the forthcoming Selangor Race Meeting. A United Association on some such lines as the United Planters' Association of Southern India will undoubtedly be of great value to the planting interest and their representations to the Government will carry greater weight than those of any individual Association.

DEPUTATION TO HIS EXCELLENCY THE GOVERNOR.—The Association being of opinion that the occasion of His Excellency the Governor's visit was a good opportunity to interview him on certain subjects, it was decided to present an address praying for certain reforms which appear to be much needed in connection with land policy and other matters.

A deputation consisting of the whole of your Committee was received by His Excellency the Governor on the 19th December, when he granted them an interview of over two hours. His Excellency was of opinion that the points raised in the address should have been forwarded to him through the Resident, but nevertheless very fully discussed each question *ex-officio*.

His Excellency sympathised with us in the matter of our inability to recover advances from labourers under verbal contract, but promised with regard to written contracts that the question of whether any document could embrace a number of contracts should be gone into. His Excellency also recommended that the questions touching (1) the planters' preferential claim to the mining rights on his own land and (2) terms of arbitration on acquisition of private land for public purposes should be reopened, and held out to the deputation, the hope that their views would be favourably considered.

In accordance with His Excellency's suggestion, your Committee have written to the Resident of Selangor fully on the above three points, but have not yet had an answer.

FINANCE.—Your Committee have the pleasure to announce that the substantial balance of $510.83 stands to the credit of the Association at the end of the year 1895, and is arrived at as follows :—

Balance in hand at end of 1894 ..		$243.83
Subscriptions paid during 1895 ..		385.00
Subscriptions still due ..		35.00
Total ..		$663.83
Less Printing, Postage, and Stationery ..	$67.00	
Less Indian Advertisements, etc. ..	84.00	
		153.00
Balance at credit ..		$510.00

E. V. CAREY, Chairman.
TOM GIBSON, Hon. Secretary.

STATISTICS OF ACREAGE UNDER CULTIVATION AND LABOUR EMPLOYED ON THE EUROPEAN ESTATES IN SELANGOR.

	Names of Estates.	Acreage under Cultivation at end of 1895.	Estimated Crop in Pikuls for 1896.	Labour. Tamil.	Chinese.	Malay and Javanese.	Total.
1	Tremelbyr ..	120	325	47	5	12	64
2	Klang ...	200	—	25	—	26	51
3	Klang Land ..	170	10	26	—	21	47
4	Lowlands ..	435	—	24	—	75	99
5	Highlands ..	65	—	—	—	20	20
6	Batu Unjor ..	135	30	16	—	46	62
7	Golden Hope	300	—	—	—	102	102
8	Blackwater ..	50	—	—	—	17	17
9	Datu Dagang	320	—	17	8	111	136
10	Simpang ..	—	—	—	—	17	17
11	Beaumont ..	200	—	—	—	35	35
12	Triangle ..	100	—	—	—	35	35
13	Lanka ..	20	—	—	—	15	15
14	Beverlac ..	70	—	34	8	—	42
15	Ebor ..	25	—	—	12	—	12
16	Glenmarie ..	150	310	38	14	10	62
17	Enterprise ..	125	350	18	7	5	30
18	Fenlands ..	105	—	4	1	58	63
19	Denmark ..	85	—	—	—	28	28
20	Pataling ..	240	—	55	30	25	110
21	Weld's Hill*	—	—	—	—	—	—
22	Selangor ..	60	150	20	—	17	37
23	Batu ..	200	200	20	—	90	110
24	Edinburgh* ..	—	—	—	—	—	—
25	Batu Caves ..	188	720	195	—	—	195
26	Kent ..	153	250	105	—	—	105
27	Uganda ..	74					
28	New Amherst	533	400	267	40	—	307
29	The Mount *	—	—	—	—	—	—
30	Wardieburn	209	850	117	—	—	117
31	Setapakdale..	306	150	117	—	36	150
32	Klang Gates	160	400	77	—	—	77
33	Hawthornden†	—	—	—	—	—	—
34	Lincoln† ..	—	—	—	—	—	—
35	Aberscross* ..	—	—	—	—	—	—
36	Inch Kenneth	225	—	50	—	46	96
37	Batang Kali..	150	—	38	—	14	52
38	Braemar† ..	—	—	—	—	—	—
98	Balgownie ..	175	—	57	—	—	57
40	Riverside ..	—	—	19	—	41	60
41	Tapioca Estate ..	1,000	—	20	165	18	203
41	Totals..	6,348	4,145	1,406	290	917	2,613
22	Return for 1894 ..	2,802	—	938	181	254	1,373
19	Increase in 1895 ..	3,546	—	468	109	663	1,240

* No returns received.

† These Estates do not belong to the Association and have sent in no returns.

TEA IN AMERICA.

New York, Feb. 12.

Notwithstanding the general tone of business circles was lifted higher as the result of the bond sale, there was no improvement in the tea trade. The market drags its weary length along the rules in buyers' favour, except in those grades which are in limited supply. There has been a moderate invoice trade during the week, and we have no change to note in prices.

Today at noon the Montgomery Auction and Commission Company will sell 9,171 packages, viz. : 2,570 half-chests Moyune, including many desirable chops ; 3,123 half-chests and boxes Pingsuey ; 262 half-chests Japan ; 95 half-chests Japan, basket-fired ; 60 half-chests Japan Nibes ; 1,257 half-chests and boxes Congou, including all grades ; 25 boxes Scented Capers ; 183 packages India, Java and Ceylon ; 1,596 half-chests and boxes Formosa, new season's, including the celebrated " White Bear" chops.—*American Grocer.*

UNDEVELOPED AUSTRALIAN INDUSTRIES.

(By John Plummer, Sydney, New South Wales.)

Australia abounds with the elements of successful manufacturing and other industries, which remain at the present moment, from various causes, in a neglected or undeveloped condition, especially in New South Wales, where the surroundings are of an exceptionally favourable character. Take, for instance, the flower farming industry. Although the colony has been described as a floral paradise, from the abundance and luxuriance of its native and cultivated flowers, the manufacture of floral perfumes and essences is unknown, although experimental scent farms have been established in the adjoining colony of Victoria. The quantity of eucalyptus oil annually exported from the colony is insignificant, yet the rich abundance of the trees from which it is obtained should enable the Australian trade to rival that of Algeria and California, from whence the world's supplies are principally obtained. The abundance of citrus fruits may at some future time lead to the establishment of manufactories for the preparation of candied citron, orange, and lemon peels, as well as of lemon, etc., oils and essences. The crystallization of mandarin oranges and the manufacture of orange marmalade are also coming industries; in fact, the latter has already been initiated on a limited scale. At present the chief obstacle to the development of the marmalade industry consists in the absence of the Seville orange, which could be introduced and acclimatized without difficulty. The olive is very sparingly cultivated, notwithstanding the fact that the soil and climate of New South Wales are identical with those of the leading olive-growing countries of Europe. The castor-oil plant grows luxuriantly in the humid coastal districts of the colony; as it does, indeed, in most tropical and sub-tropical countries, and in the regions bordering the Mediterranean, viz., Greece, Italy, and Spain. The annual consumption of castor oil in Australasia is over 600,000 gallons, of which 130,000 gallons represent the requirements of New South Wales. Nearly the whole of the supply is derived from India; and the wholesale price of the oil in Sydney is about 2s 6d per gallon. The initial cost of establishing the industry would be heaviest in the item of machinery for expressing the oil, although the price of labour would also have to be considered carefully, as the Calcutta oil is produced at a minimum outlay in this particular. Flax cultivation is another neglected industry. As is well-known the plant not only supplies flax and tow fibre, but also a valuable seed, of the greatest use as a fodder for cattle, in the form of oilcake, of which it forms the chief ingredient; also for medicinal purposes; and above all, linseed oil, which forms the base of all paint-mediums. Cotton-seed oil is imported to some extent, although it could be locally obtained, the cotton plant being capable of easy cultivation in many places. Indigo can also be readily grown. There is in the colony a wild plant, so abundant as to be a pest, from which it was hoped tinctorial juice might be obtained; but experiments have hitherto proved unsuccessful. The true plant which supplies the indigo of commerce occurs wild in Queensland, and there is no reason why it should not be acclimatized in New South Wales, experiments in this direction always having proved successful. Hops are but little cultivated in New South Wales, although a few very small crops are picked in the neighbourhood of Orange. In Victoria, Tasmania, and New Zealand, however, they are successfully grown, the product being but little, if at all, inferior to the best Kentish hops. In the opinion of experts the plant could be successfully grown, in New South Wales, which imported during 1894 no less than 841,938 lb., of hops, valued at £36,010. Many other instances of neglected industries might be adduced, but the foregoing will suffice to show the opportunities afforded in New South Wales to those possessing the requisite capital, experience, and energy.

THE INDIAN TEA ASSOCIATION, LONDON, AND THE PROPOSED TAX ON OVERSIDE DELIVERY.

The following letter has been addressed by the Indian Tea Association to the Secretary of the London Chamber of Commerce, protesting against the proposed tax on the overside delivery of tea which, if it became operative, would seriously interfere with the customary transhipment of parcels destined for other markets than those of the United Kingdom.

"Indian Tea Association, London,
"14, St. Mary Axe, E.C.
"February 18, 1896.

"Kenric Murray, Esq., "Secretary,
"London Chamber of Commerce,
"Eastcheap, E.C.

"Dear Sir,—On the part of the Indian Tea Association I beg to signify their desire to join in the protest against the proposed agreement between the London and India Docks Joint Committee and shipowners, as being greatly detrimental to the interests of the Indian Tea industry, and I beg to request that you will be good enough to notify this fact at the meeting convened for today to consider the matter.—I am, dear sir, yours faithfully,

"(Signed) ERNEST TYE,
"Secretary."

—*H. & C. Mail*, Feb. 28.

THE TEA MARKET,

early in the week, commenced with a strong feeling, but closes with a quiet, if not dull, tone The fact is the trade will not buy forward to any great extent when the general run of imports proves so indifferent in quality. For any district Teas with point and character there is real competition. On the eve of another season in China there is again an opening to pick up the lost trade. Russia, however, now holds the field, paying not only prices far in excess of London quotations, but buying five-sixths of the northern grown Teas. Consumption is growing apace in Asiatic Russia, the Siberian railway opening up hitherto inaccessible regions.—*London and China Express*, Feb. 28.

PLANTING AND PRODUCE.

THE PROCEDURE AT THE SALE ROOM.—The correspondence which we published last week on the subject of the public sales of tea ventilates a matter, which has forced itself upon the attention of the trade. The growth of business in India and Ceylon tea renders the consideration of proposals tending in the direction of reform in the procedure of the sale room, a question of urgent importance. In our columns, Mr. D. F. Shillington called attention to the unreasonable policy of crowding the entire offering of Ceylon tea into one day's sale in each week, and made the suggestion that the week's offering should

be spread over two days. Admitting the difficulty of the choice of the other day, Mr. Shillington suggested that a convenient way out of the difficulty might perhaps be found if the Tuesday Ceylon sale were adjourned punctually at two o'clock until Wednesday at twelve o'clock, when the remainder could be sold with the benefit of an extra morning's tasting. But, as this takes away Wednesday from the Indian sale, Mr. Shillington would meet this objection by dividing the week's offerings of Indian tea into two sales—Mondays and Thursdays—still retaining Monday for the larger part, say three-fifths of the total on Monday and two-fifths on Thursday. "It would be evident," he points out, "that the opportunities for tasting the samples would be more evenly distributed over the week, and confidence in the valuations, which is the surest guarantee of satisfactory biddings, would naturally result. Coming from such an authority, the suggestion will, no doubt, receive the consideration it deserves. Mr. Herbert S. Parker in his letter directs attention to a proposal which is likely to be made to importers and their brokers by some of the London buyers. It is to follow the example of Calcutta, and to cease holding any public auction of Indian tea for some few weeks in the summer in order to give "the market" a period of rest, and to agree to a date upon which the first public sales of new crop shall be held in London. If the proposal be a good one, says Mr Parker, "there is not much difficulty in carrying, it out now that nearly all producers close their crops so much earlier than they used to; but such arguments in its favour as there may be, will no doubt be put forward by those who urge its adoption." In these days of keen competition it is, no doubt extremely difficult to ensure combination in any plan which necessitates departure from established custom. There is, however, so much of "sweet reasonableness" in practical suggestions for relaxing on the one hand the "exhaustive ordeal" of sitting through the whole sale of Ceylon tea during one day, as described by Mr. Shillington, and obviating the need for calling together annually buyers to intermittent sales during June, as mentioned by Mr. Parker, that we feel sure those concerned will give due consideration to the remedies suggested, coming as they do from correspondents who are intimately acquainted with the ways of the sale room and the interests of the trade.

Indian Tea Cultivation.—Under this head the *Times* of Tuesday refers to the note in the *Gazette* of India, on Mr. J. H. O'Conor's statistics on tea cultivation, giving the following summary: The statistics show that the area under tea is somewhat less than half a million acres, about two-thirds of which is, in the Brahmaputra and Surma Valleys—that is, in Assam, Cachar, and Sylhet. The figures given by Mr. O'Conor show, that tea cultivation is almost wholly confined to Bengal and Assam, the tea gardens elsewhere being only 7 per cent. of the area under tea. At present the cultivation in India is concentrated almost entirely in districts with a damp and equable climate where repeated pickings are possible. One point brought out clearly by the returns, is that for years past there has been no check to the growth of the industry, which annually shows a considerable expansion. Every year since 1885 has seen an increase in the area cultivated, ranging from over 9,000 acres in 1889 to nearly 27,000 acres in 1894, and the percentage of increase is growing greater. The largest increase of all, Mr. O'Conor observes, was in 1893 and 1894, "the former of these being the years in which the mints were closed, an event which was regarded by some as the herald of disaster to the tea industry." One table given by Mr. O'Conor shows how completely the tea gardens of India are dependent on the external demand, the consumption of India being trifling in comparison with the whole production. Thus in 1894 nearly 125 million pounds of tea were produced in India, of which all but 4½ million pounds were exported. If to this be added the amount of Ceylon tea consumed in India—nearly 2½ million pounds—it is seen that the population of India consumes about seven million pounds a year, or about one-fortieth of a pound per head, or one-hundredth part of the consumption of the United Kingdom. Indeed, if the quantity consumed by the small European population of India, including the Army, is deducted, there would not be very much left for the native population. Mr. O'Conor, however, records that the consumption of tea is increasing amongst the native population in the larger towns, especially amongst the Mahomedans.

Natal and its Produce.—In his paper on Natal, read at a meeting of the Royal Colonial Institute on Tuesday, Mr. John G. Maydon, M. L.A., of Natal, made the following reference to the various productions of the colony, which are chiefly sugar, tea, and fruit growing. Of sugar he said: Sugar planting has, after a chequered history, now settled down into an occupation of very great importance, with a thoroughly established assurance of success, which is chiefly founded on the establishment of central mills enabled to deal with large growths of cane, and thereby to apply the most economic and approved methods to the actual manufacture of sugar, the production of which has accordingly become possible much more cheaply than heretofore. But the system has a much farther reaching consequence, because the actual planter has by it been enable to turn all his attention and capital to the agricultural portion of his business, which is by so much the better and more profitably conducted. Moreover, sugar planting has by this means been brought within the reach of many men who, from lack of the very large capital necessitated to conduct the two operations of planting and manufacturing, were formerly debarred from the pursuit of this industry. A very modest capital will now suffice to start a sugar plantation, provided ordinary business energy and acumen are displayed. The demand for sugar in South Africa is, of course, far, beyond the production, and the consumption with the rapidly-increasing population, is likely to grow for many years to come in a quite disproportionate ratio to the possibilities of increased production. The cane will not thrive farther south than the river Umzumkulu, as although it grows still further south its sugar-producing qualities diminish, thus unfortunately the Cape Colony is deprived of the benefits of devoting its coast lands to this very remunerative and successful industry. Frost is, of course, fatal to sugar cane, and for that reason only the semi-tropical coast lands are adapted to its production, but in Natal many thousand rich acres, and happily situated, only await the mattock and the ploughshare to return an ample rich harvest to the planters who shall commence their tillage. This remark is especially applicable to the land lying south of Durban, now being opened by the railway in course of construction through it, and which is generally very fertile.

Natal Tea.—Referring to tea Mr. Maydon said: It is only within the past five years that it has emerged from the experimental into the industrial stage, and to the dogged perseverance and industry of Mr. J. Liege Hulett this successful *début* is largely due. Even yet, however, the annual production has not reached quite 1,000,000 lb. though this present season of 1895-96 will probably see that limit exceeded. This increase of late years has been exceedingly rapid, which is partly due to an ever-growing acreage under tea cultivation, but also, still more largely, to the greater productiveness of the tea plant as it reaches maturity about eight years after being planted. The very slow growth of the tea shrub, and the consequent long period of waiting for a return on the capital invested, will always prove a deterrent to the wide embarkation in this special industry; at the same time the very delightful nature of the occupation and its extreme profitableness when once established offer a very strong inducement, and where a pleasant occupation is the desideratum, with a view to ultimate rather than to immediate return on captial, it is difficult to conceive a more attractive career. Tea planting is, like sugar, confined to the

coastlands, but being a hardier plant, and thriving best on a lighter and less fertile soil, is conducted on a slightly more elevated plateau than it. Both industries are alike in offering a very wide field for expansion, and a demand far, far larger than production can reach for many years to come.—*H. and C. Mail*, Feb. 28.

ORANGES, LIMES, AND COFFEE.

THE HAWAIIAN LAND AND IMPROVEMENT COMPANY'S ESTATE.

When men who have established and managed successfully large and extensive sugar plantations upon these islands, leave the line of their beaten track and engage in other enterprises, it means to the average mind something deserving of more than passing note. It shows that minds trained to business, with sagacity born from experience and success in all their undertakings, active from constant contact with others of like character, scent in the distance the trend of future enterprise and industries, and with their desire to be in the lead in the new as well as the old pursuits, they at once seek to secure that advantage which diligence gives, and will insure the success they so like. So, when the promoters of the Hawaiian Land and Improvement Company secured several thousand acres of Mr. W. H. Shipman's large tract of land, best suited to coffee raising and fruit culture, the coffee growers and fruit raisers in Hawaii at once felt encouraged, and these industries received a new impetus. When persons, who so long acted on the belief that sugar alone is king and the only product of worth here, and thought all other pursuits must be subordinate thereto, embark in coffee growing and fruit culture, it is because they believe in its success and future prosperity. That these men knew their ground well and had good reason for their action and for the selection made for their operations is now fully corroborated. While but little in comparison with their proposed plan has been accomplished, yet enough is done to fully warrant the statement that their enterprise is a success.

It is truly gratifying to look over their operations and note the evidences of abundant promise. Through the kindness of Manager Ross we were shown over the properties of the Hawaiian Land and Improvement Co. It comprises several thousand acres of the choicest land in Hawaii for coffee raising and fruit culture, being between the ten and eleven mile post on the Volcano road, joining it and to the right thereof, extending to and into the forest, so that nearly two-thirds of their holdings are forest lands. It is divided up into lots of various sizes, each of which is to be reached by good roads directly from the fine macadamized road leading from Hilo to the volcano. It all faces the sea which is clearly visible. The land itself is of the *a-a* formation, covered with a rich leaf mold. It can be easily cleared and made ready for a crop of coffee or fruit at a small cost. The company and those closely connected therewith have now about fifty acres cleared thirty-seven of which is planted to oranges and limes, eleven acres will be planted to coffee, all of which is now ready and some planted. The oranges and lime planted are thrifty and doing well, the variety used the navel, shipped from southern California, three shipments having been made, two of which were quite successful, the other partially so. The limes are grown on the place from seed. The coffee plants are also grown in nurseries on the place. The company now has over 2,000 lime trees standing in their nursery and many coffee plants. While it has been the policy of the company heretofore to ship their trees from California, in the future it will be its policy to grow seedlings from the native orange and to bud in the California navels. It is claimed that these oranges will ripen and reach the Pacific coast markets during the months in which the California oranges are yet unripe.

This company certainly can be congratulated on its foresight, and upon the success which it now can rest assured is an accomplished fact. Navel oranges will grow here as well as in California, and in quantities to fully supply all the market's demand. Limes will grow in quantities and quality to be a success, and this large tract of land is now without doubt, proven to be especially adapted for the successful growing thereon of oranges, limes and coffee. Much of the success which this company has met with must be attributed to the thorough manner in which their land has been handled, the care bestowed in the clearing and preparing for planting, and in the setting out of plants and the cultivation bestowed thereon thereafter. No one can fail to realize this upon an examination of the land of the Hawaiian Land and Improvement Company.—*Hilo Tribune*, Dec. 14.

CITRONELLA-OIL ARBITRATION.

One of the topics widely discussed in Mincing Lane drug circles during the past two or three weeks has been the progress of an arbitration case relating to a parcel of citronella oil, the invoice value of which was about 300*l*. As it is possible that more may be heard of this case, we refrain on this occasion from mentioning the names of any of the parties connected with it, and simply present the following outline of facts :—

On December 10 last, a London drug-firm purchased, through a drug-broker, four drums of citronella oil, weighing about 7 cwt. each, at 1s 8½d per lb. which was then the market price of the drug. The article was offered by the broker, as "Citronella oil, as per sample herewith," for delivery during January or February 1896, but the buyer does not appear to have exercised any special care in the examination of the sample before accepting the offer. The contract was dated December 19. It is written on an ordinary form, bearing on the back (as all such documents do) a clause to the effect that disputes must be referred to arbitration, according to the rules of the London Produce Brokers' Association. The contracts reads :—"Bought by your order and for your accounts four drums citronella oil . . . as per samples in your possession." On January 17, the broker tendered the goods to his buyer, who then applied for samples representing the average quality of each of the four drums. These arrived and were apparently subjected to a closer scrutiny (although no analytical tests seem to have been applied) than had been bestowed upon the first sample. The result of the examination was altogether unsatisfactory. The buyer sent for the broker and expressed the opinion that the oil was not up to the fair standard of quality. He also then asked, we understand, for the name of the ship in which the goods had come. It should here be observed that it is the rule in transactions of this kind either to ask for the name of the ship at the time of purchase, or, in forward contracts, to do so when the time for delivery is near. This gives the buyer the security that the goods are of direct import—*i.e.*, will be handed the him in the same state in which they arrive. In this case the buyer appears not to have exercised that precaution. When, however, the quality of the goods was challenged the broker said that the oil was "land carriage"—that is to say that it came from a private warehouse. This the buyer declares, came to him as news, and confirmed him in his decision to refuse the tendered parcel. The broker thereupon stated that he would communicate with his principal, whose name then transpired for the first time. The principal held the buyer to the contract, stating that the sale had been by sample, and the goods were equal to that sample. Each of the parties then named a produce-broker as arbitrator. The arbitrators failed to agree, and called in an umpire, who decided that the bulk was equal to the sample, and that therefore the buyer was bound to accept delivery. The buyer then offered to forego the goods at the price paid for them, notwithstanding that in the meantime the market price of citronella oil had advanced from 1s 8½d to 2s per lb. This the seller also declined, and thereupon the question was referred to a committee of the London Produce Brokers' As-

sociation consisting of three brokers. Both the seller and buyer appeared before this Court in support of their contention. The seller repeated his former declaration that sample and bulk were equal, and that therefore the contract was valid, the quality of the goods having nothing to do with the matter. The buyer contended that the sample should be submitted to chemical analysis, as the ordinary test of smell and appearance was not necessarily conclusive of its quality, and that the finding of the analyst should guide the committee in its decision, This the committee agreed to, and specimens taken from the bulk and from that part of the sample accompanying the original offer (which had remained in the hands of the broker) were submitted to Mr. Chas. Umney, who reported as follows:—

SAMPLE No. 1.

Sp. gr. at 15 deg. C.	·8571
Solubility in alcohol of 80-per-cent. strength by vol. (sp. gr. 0·645 at 15 deg. C.	Not completely soluble in any proportion

The specific gravity and behaviour towards alcohol of the above strength indicate gross adulteration.

Tho substance used for adulteration was found to be kerosene, the proportion present being between 40 and 42 per cent.

Note.—Pure citronella oil has a sp. gr. of from ·887 to ·900 at 15 deg. C.. and is soluble in ten times its volume of alcohol of 80-per-cent. strength,

This specimen was taken from the sample submitted with the original offer; the one taken from bulk was identical with it, excepting that its sp. gr was ·8577.

If any slight difference exists (Mr. Umney reports) between the odour of the two oils, it is dependent upon the kerosene with which they are adulterated, that contained in No. 1 being of a better grade and free from odour, than that in No. 2. In my opinion no sufficient difference exists between the oils to make their commercial value other than practically identical.

Notwithstanding these analyses, the committee decided in favour of the seller, and gave the following award:—

APPEAL DECISION, FEBRUARY 17.—Your appeal against the award of the arbitration on the contract dated December 19, 1895, for four drums citronella oil sold for delivery during January-February, 1896, has been considered by a committee in accordance with Rule 7 of the Association, and they have decided as follows —viz., to confirm the umpire's award that the delivery is equal to the sample and must be taken by the buyer. (Signed) ANDREW DEVITT, President.

Apart from considerations of commercial morality involved in the question, the matter is of considerable trade interest for various reasons. In the first place it shows a recrudescence of the practice of adulterating citronella oil, which was believed to have been put a stop to some three or four years ago through the exertions of Messrs. Schimmel & Co. That firm's denunciations were directed against the sophisticating Singalese. There is no evidence that those gentlemen have had a hand in the mixing process disclosed by Mr. Umney, neither is there anything to show that the adulteration has taken place in London. From this point of view alone the obscurity in which the origin of the oil is involved must be regretted. Buyers of citronella oil, however, will do well to beware of purchasing before they have ascertained the quality of the goods offered, especially because the purity test is one which, to be made roughly, requires no other appurtenances than a bottle of 80-per-cent alcohol. From a legal standpoint, also, the arbitrators' decision raises an interesting question. When a person deliberately declares that he offers "citronella oil" is he justified in supplying it mixed with 42 per cent of kerosene? The clause *as per sample* might be held to safeguard him, but there is in the Sale of Goods Act (56 and 57 Vict., 1893) a section which provides that "where there is a contract for the sale of goods by description, there is an implied condition that the goods shall correspond with the description; *and if the sale be by sample as well as by description*, it is not sufficient that the bulk of the goods corresponds with the sample if the goods do not also correspond with the description." This section appears to have been ignored by the brokers who formed the court of appeal in this instance. But it is perhaps worth the while of buyers to consider whether it would not be preferable to reserve liberty of action to appeal to the law of the land rather than to bind themselves, on their contracts, to abide by the decision of gentlemen who are neither legal nor scientific specialists. —*Chemist and Druggist*, Feb. 29.

MARKET FOR TEA SHARES.

Thursday Evening, Feb. 20, 1896.

Business still continues active in many Indian Tea shares, and some of the Ceylon shares have latterly also participated in the movement.

The *Bullionist* this week again refers to the Preference shares of the Mungledye Tea Company, correcting some slight inaccuracies in its last week's criticism.

The *Financial News* devotes a column of its Tuesday's issue to an account of the position of Ceylon Tea companies' shares, and remarks on tho great advance which has recently taken place in quotations.

FRESH ISSUES.—Dimbula Valley Pref. have been dealt in just at a fraction below £1 premium, or equal to £6 per share, and the Ordinary have changed hands at par.

MINCING LANE, though a little easier for Ceylon Teas, keeps steady to firm for Indians, while recent news from India of an increased diversion of the crop to Asiatic and other markets seems likely to bring about a fresh advance in price here in London.

CEYLON SHARES.—C. T. P. Co. Ordinary have been taken at 25¼, and the Prefs. are enquired for at 16¾ upwards, with holders, however, asking 17 for them.

Ceylon and Oriental £3-paid Ordinary shares have changed hands at a fraction under 3¼.

Eastern Produce and Estates £5 shares are wanted at 4½ upwards without finding shares.

Lanka Plantations are still inquired for at 5¼ up to possibly 5½, but with sellers asking rather more money.

Oriental Estates 7 per cent. Prefs. (in arrear of interest) are being asked for at about £2 upwards for the £5 share.

Scottish Ceylons have been taken at 22½, or an advance of 10s over last price.

Standard Tea Company's £6 paid shares are asked for, but without finding shares.

Debentures also of Ceylon companies have been inquired for, but most of them, though paying high interest, appear to be redeemable at par, and consequently buyers hesitate to pay the premium of £3 or £4 per cent which is asked for them.—*H. and C. Mail*, Feb. 21.

THURSDAY EVENING, Feb. 27.

Business still goes on increasing in the shares of the Indian tea companies, and the buying of these shares is stimulated more and more, firstly by the large amount of money now seeking investment, and secondly by tho increasing difficulty which attaches to the obtaining of anything like a fair return or yield either upon home, or, indeed, even on foreign or colonial industrial or any other class of securities. In view of this fact it is almost surprising that the augmentation in values of tea Companies' shares has not been even greater than it is.

The *Financial Times* of Thursday devotes a leading article to the position of Indian tea companies preference shares, and makes some very pertinent and instructive remarks upon their value to investors even at their present advanced values, and deals in a masterly way also with the general position of the Indian tea industry and the security which it offers to investors in these "prior liens."

MINCING LANE, though again a little easier for the heavy supplies of Ceylon Tea, keeps steady to firm for the continuously diminishing offerings of Indians. Tho almost entire cessation of shipments from Calcutta, which is now reported, warrants the expect-

ation, now pretty general, that there is not likely now to be any material dropping off in market values until the completion of sales of the past year's crop.

Fresh Issues.—Cachar and Dooars shares, both Ordinary and Prefs., have now been granted an official quotation and a special settling day (March 5), and in our future issues they will appear under "Market Stocks" in our table of shares.

Dimbula Valley Ordinary Shares are still inquired for at or about par, while the Preferences are buyers at anything under £1 premium, though this latter figure has not yet been actually reached for them.

Ceylon Shares.—C. T. P. Co. Ordinary have touched 25¼, record price; and the Prefs. have changed hands at £17. Eastern produce shares are still wanted at 4½ upwards.

Lankas are buyers still at 5¼, but holders want a considerably higher price, say 5½ to 5¾.

Indian Debentures.—Assam Frontier and Upper Assam Firsts are wanted, and a moderate premium, say 4 or 5, would be paid, but none are at present to be had.—*H. and C. Mail*, Feb. 28.

NOTES FROM OUR LONDON LETTER.

London, Feb. 28.

The subjoined extract contains matter which may or may not have come under your observation. [Quoted on page 684.—Ed. *T.A.*] At all events it seems desirable to draw your attention to it, as

THE TEA INDUSTRY OF INDIA,

is so closely associated with that of Ceylon. What has especially struck us in our perusal of this extract has been the statement that nearly 2 and half million pounds of Ceylon tea is consumed in India! To us outsiders this appears a statement of a curious character. Perhaps the tea may be used in India for blending purposes. Can you enlighten us on this point? For it seems very singular that with its once large production of tea such an amount as 2½ million lb. should be indented for on Ceylon.

INSPECTION OF MACHINERY.

We are glad to see that upon another subjec the "Old Rag" has succeeded in arousing Government intervention. You were the first to ventilate the subject of the necessity for some supervision over boilers and machinery. What you initiated was echoed at home in the columns of the *Engineer*, and we are sure it will be satisfactory to you that at last your Government is acting upon your suggestions, and that legislative action is being discussed in your representative chamber.

COFFEE.

The extract that follows will remind you of the time when your interest in all that concerned coffee was of a paramount character. It is not to be supposed that you are altogether without some remains of that interest now, for from all we read coffee, though "scotched," is not absolutely dead among you. Opinion will be divided, as it always has been, as to whether the reduced consumption of coffee among our home population can be assigned to the amount of duty payable upon it, or whether it should be assigned to the developed taste of the British islanders for tea. The improved quality and cheapness of the latter article is no doubt largely accountable for this development. Coffee, to be really palatable, requires a large admixture of milk or cream. Both these are somewhat expensive luxuries with us. On the other hand there are persons, and a large number of them, who possess a singular preference for tea without any admixture of milk at all. Economy, therefore, is probably largely at the bottom of the preference shared here for your new over your old chief product.

The Duty on Coffee.—At the House of Commons last night a deputation, representing the importers, exporters home trade dealers, and brokers engaged in the coffee trade, waited upon the Chancellor of the Exchequer for the purpose of urging the total abolition of the present duty on coffee. Mr. Lough, M.P., in introducing the deputation, stated that the coffee trade was in such a condition that if it was not assisted it would be extinguished. Since 1873 the trade had decreased by about a million hundredweight. At present the import trade only totalled about three-quarters of a million hundredweight, while the export trade was about half-a-million hundredweight; and if their request were not granted he feared the trade would still further decrease. Mr. Robert Wales (Chairman of the coffee section of the London Chamber of Commerce) urged that the imposition of the duty cause restrictions in mixing and other operations while the coffee was in bond, the result of which was to drive the trade to Hamburg and to Holland, where there was no duty on coffee. The Chancellor of the Exchequer, in replying, said that obviously if the duty on coffee was to be repealed that on chicory must also be abolished; and, following that, he had no doubt claims of a similar nature would be advanced regarding tea and cocoa. So far as the consumer was concerned he thought there was no case for the repeal of the duty; and he pointed out that, although the duty was halved in 1873, no increase of consumption followed. In fact he had received representations antagonistic to the views of the deputation. As to the export trade he was afraid that its decrease was not due to the duty. The Brazilian production had largely increased, while that of British India, whence coffee to a great extent formerly came, had decreased; and the result had been that, whereas it used naturally to come to England, now it went to the agents at Continental ports, because it could be more easily distributed there, not because of the duty. Moreover, France had placed a tax on the article; and the port and dock dues and warehouse charges at Hamburg were lower than in London, both of which still further tended to decrease the export. In conclusion he announced that as regarded the arrangements affecting bonded coffee he would endeavour to make them more convenient than they were.

Fiction about Plantains.—A great deal of literature and romance about the plantain is just now going the rounds in Great Britain. The importation of the succulent fruit from Jamaica has fired the public imagination. We forget at the present moment how many families can be supported on an acre of bananas, as they are called; but it is something that would alarm a Malthusian. Mr. Stanley, M.P., found some plantains in Darkest Africa twenty-two inches long and eight inches round, one of which was a square meal to the most voracious of his friendly savages after ten days' semi-starvation. Each stalk, he says, bore fifty or a hundred of such fruit. The most interesting feature, however, about the plaintain is that it makes excellent wine. Speke, in his Nile Journal says, the wine is rather like hock, but he omits to state when he had last tasted hock. In Fiji, they make wine, as they call it, from the banana, and with such success that an enterprising trader wanted to import pulp bananas to compete with the domestic gooseberry in the manufacture of "simkin." A tree from which one can manufacture Manila hemp, lace pocket-handkerchiefs, hats, plantain fritters, marking ink, and champaigne is evidently no ordinary growth. At present the export of Manila hemp is valued at three millions sterling.—*British North Borneo Herald*, Feb. 16.

THE COFFEE CROP IN JAVA.

According to a telegram from the Governor-General of Netherlands India, dated 19th inst., the Government's coffee crop in Java for this year is now estimated at 290,000 piculs.—*L. and C. Express*, Feb. 28.

COCONUT OIL.

CEYLON.—The placing for consumption early in the week of the lots of speculative oil, which have been like a "wet blanket" hanging over the market for some months, has imparted more strength to prices, and given both holders and buyers more confidence in the situation. Cables to hand, giving cost for shipment from the coast equal to about 5⅝c. here, induced a large importer to gather up what stray lots they were offering on the market, and at the close 5⅛ to 5¼c. was quoted, though a small lot might be had at 5c. The sales comprised 200 tons early in the week for consumption in the West at 4⅞c. less 1 per cent. for sharp cash. Later 25 tons at 4·85c., 25 tons do. at 4·90c., 25 tons at 4·92½c. and 25 tons at 4·95c., all on regular terms.—*O. P. D. Register*, Feb. 17.

INDIAN TEA ASSOCIATION.

Abstract of proceedings of a meeting of the General Committee, held on the 17th Feb. 1896:—

Read letter of 14th January, from Mr. W. T. Carter, resigning his seat on the Indian Tea Fund Committee on departure for England. This was ordered to be recorded.

As the remaining Members of the Indian Tea Fund Committee were also members of the General Committee and there appeared to be no longer any special reason for carrying on the former Committee, it was decided that it should be dissolved and all business in connection with the American Market Fund should be submitted direct to the General Committee.

Letters of 1st, 8th, 15th, 22nd, and 29th November; 6th 13th, 20th, and 27th December; 3rd, 10th, 17th, and 24th January; with their respective enclosures and accompaniments from the Secretary of the Indian Tea Association, London, were brought up for record, having been previously submitted to members in circulation; also letter of 22nd December from the Honorary Secretary, Travancore Planters' Association, forwarding R1,472-10 6 on the American Market Fund, for which the special thanks of the Committee had been sent.

A statement was submitted showing the total amount collected to February 15th, under the present levy to be R85,382 3-9, of which R38,921-102 being the equivalent of £2,250 had been remitted to London. Payments in Calcutta amounted to R1,283 13 8 and the balance in hand was R48.115 6 2. The amount outstanding had been reduced to R1,105-5 0. It was decided to make a further attempt to induce the firms holding aloof to subscribe.

Considered letter of 11th January, from Messrs. Watson, Sibthorp & Co., stating that a very considerable quantity of sound high class tea had been shipped from this market to Persia for some seasons past, and asking the Committee to place on record their statement as brokers for the largest buyers for the Persian market, that so far as they knew no unsound tea had ever been shipped from this port.

Considered letter of 16th January, from Secretary to the Government of India, Revenue and Agricultural Department, forwarding a copy of further correspondence with Messrs. T. Christy & Co. respecting the manufacture of Theine from low grade Indian Teas.

This correspondence had been re printed and circulated for the information of Members, and the letter was to be acknowledged with thanks.

Read letter of 1st February, from Secretary, Calcutta Tea Traders' Association, drawing the attention of the General Committee to the delay in issuing the revised estimates of the Tea crop for 1895 as compared with 1893 and 1894. The Assistant Secretary having stated that the estimates in question were issued about twelve days later in 1895 than in the previous year, but that there were special reasons for the delay, it was decided to reply to the Committee of the Tea Traders' Association, stating that every effort would be made to expedite their issue in future, but that it had been found in practice quite impossible to obtain the information from gardens under a period of one month.

Considered letter of 1st February, from the Chairman, Assam Branch, conveying his views on the Memorandum by the Reporter on Economic Products to the Government of India, on the subject of a scientific officer for the tea districts.

Mr. Buckingham thought the first step should be to secure the services of an agricultural chemist, as it could hardly be expected to secure the services of a scientist whose experience would embrace all the subjects on which information was wanted. Mr. Buckingham did not see any difficulty as regards the equipment of a laboratory. The Committee decided that it would be now advisable to avail themselves of the offer of an interview with the Hon'ble Mr. Woodburn on this subject, and the Chairman and Mr. Ormiston undertook to represent the Committee in the matter.

Considered letter of 10th February, from Messrs. Begg, Dunlop & Co., enclosing letter addressed to the Chairman by Mr. W. H. C. Whigham, Manager of the Hautley Tea Estate, Assam, giving an account of certain insect pests which did considerable damage to the tea bushes in his garden from which he sent some cuttings.

It was decided to submit the letter and specimen to Dr. Watt, the report on Economic Products to the Government of India and to ask him for the favors of his report.

TEA IN AUSTRALIA.

There has been a good demand for China tea, and sales are reported at 700 half-chests common congou, 2,350 half-chests panyong at 4½d to 5½d, 650 half-chests panyong at 6d to 6½d, 50 half-chests panyong at 7d, 100 half-chests panyong at 8d, 350 quarter-chests buds at 6d, 200 quarter-chests buds at 8d, 200 half-chests kooloo and 300 quarter-chests S.O. pekoe at 6½d. Of Indian, 300 packages have been sold privately at 7d to 9d. Business in Ceylon covers 470 packages at 6½d to 9d, and 100 packages at 10½d to 1s 1d. At auction, on Tuesday, 101 packages Ceylon were sold at 6d to 8¾d. At auction, on Thursday, 1,966 chests, 147 half-chests, and 50 quarter-chests Indian ex New Guinea were offered, and sales were made publicly of 1,198 chests, 147 half-chests, and 50 quarter-chests. The bidding at first was rather slow, as some of the earlier lots were rather unattractive, but as the sale advanced the bidding became animated, and the prices realised were firm all round. The sales were as follows:—Orange pekoe, 333 chests, 67 half-chests, and 50 quarter-chests at 7d to 10d; pekoe, 550 chests and 80 half-chests at 6¼d to 10d; pekoe souchong, 315 chests at 6¼d to 7¾d.—*Australasian*, Feb. 29.

COFFEE PLANTING IN NEGRI SEMBILAN.—From the report of the Acting Collector and Magistrate, Coast district, for the month of January 1896, published in the *Negri Sembilan Government Gazette*, we quote the following:—

On 1st January Mr. J. R. Watson, manager of the Port Dickson Coffee Company's estate, arrived from Johor with 110 Tamils (men, women, and children), and conveyed them by special train to the estate, which is at the 10th mile on the Railway. Very good work has been done by this Company during the past few months, 300 acres of forest having been felled, nurseries made and cooly lines constructed. A large number of coolies, consisting of Chinese, Tamils, Malays of the country, and Banjer Malays, are employed and Mr. Watson reports favourably on their health.

THE JAPAN TEA CROP.—The *Japan Weekly Mail* of Feb. 8 says:—There is nothing doing in Tea, and nothing yet can be said about the new crop, but if the recent cold spell we have had is much further prolonged, we shall look for a delay in budding and a late season.

TEA IN AMERICA.—We have received a copy of the *New York Press*, containing the report of an interview with Mr. Blechynden regarding the effect which the proposed duty on tea would have, and we hope to be able to quote it in our Monday morning's issue. It appears that it was with some hesitation that Mr. Blechynden consented to be interviewed, and he was very cautious in what he did say. If the standard was raised the pure teas of India and Ceylon would of course have to face a keener competition than they do now, but on the other hand an improved taste for good teas would be established. The views of Mr. Beling are also given.

THE "INDIAN FORESTER."—The contents of the February number are as follows:—1. Original Articles and Translations: An injurious insect in Jodhpur, by E. Stebbing; Re-afforestation of the Mahasu-Fagu Ridge, by Pandit Sunder Lal Pathak; Die Mathematik under Wald. II. Correspondence: Forest Appointments in Bombay, letter from 'Forest Officer.' III. Official Papers and Intelligence: Summary of Progress during the five years 1889 to 1894. IV. Reviews: Wood Working Machinery; Forest Administration Reports for 1893-94 for Bombay, Baluchistan and Burma. VI. Extracts, Notes, and Queries: Oil of Turpentine; Shifting Sands; Death of Professor Wilkomm; Dr. Grassmann; The Turpentine Tree. VII. Timber and Produce Trade: Churchill and Sims' Circular, January 1896; Market Rates for Produce. VIII. Extracts from Official Gazettes.

CENTRAL TRAVANCORE.—*Weather*.—Fine with a little land wind in mornings. *Tea*.—As is usual at this time of year, not flushing much. Pruning is going on in most estates just now. *Coffee*.—Crops fairly up to estimate with one or two exceptions. Nearly all new clearings have been burnt off, and in most cases the burns have been all that could be desired. At this time of year when the grass is burnt, more or less damage is caused by buildings being destroyed. One estate lost three lives and a writer's house in this way. Another estate had its factory burnt in which was stored 500 bushels coffee. This last however was caused by upsetting of an open kerosine lamp. I am told the accident was caused by the same cooly who managed to set fire to the Glenmary Factory three years ago in the same way. It seems almost incredible that the same man should do the same thing again.—*Planting Opinion*, Feb. 29.

TEA IN AMERICA.—Reviewing Mr. Blechynden's work in America during Dec. the *Pioneer* says:—If we make a suggestion it is that a large sum should be provided annually for extending such advertisements as are already issued in the States, where the people are accustomed to sensational posters and placards. The present age is one in which a demand for any article for domestic use or consumption can be created by extensive advertising, and many a firm spends thousands of pounds monthly in forcing its wares on public notice. This practice is found to pay, the greater the cost of the advertisements, the larger being the trade demand. If the Indian Tea Association were to flood America with announcements regarding the product in which they are interested, and keep up the pressure for two or three years, the effect would soon become apparent. The advertising would have to be on a large scale and it might cost some thousands of pounds, but it would be money well laid out.

THE ERECTION OF CENTRAL TEA FACTORIES on the Nilgiris is strongly and, says the *Madras Mail*, sensibly advocated by *Planting Opinion* in an article which will be found in another column. In these days of keen competition, the only way in which the small man can live is by co-operation. This is true in every business in which cheapness of production is a prime factor. The main reason, we believe, why Nilgiri tea does not generally secure the big prices realised by that of Darjeeling and the higher altitudes of Ceylon lies in the fact that a number of small estates have to depend for the manufacture of their leaf on under-equipped factories. There are many localities on the Nilgiris where a central factory might be worked at once to the advantage of the neighbouring tea-planters.

A FLOURISHING COMPANY.—The Bandarapola Estate Company is doing very well, and the extent of the property is being steadily augmented—plots of land, sometimes of very small acreage being continually added to the already large area of Bandarapola estate from the adjoining villages Ovala, Muandeniya, Godapola, Akirilla, Allacollamada, Bandarapola, etc. The new purchases are being put, some under tea, and others under cocoa, according to the soil. The villagers seem to have been convinced of the absurdity of keeping their holdings of land uncultivated, and so they dispose of their plots and some of them seek employment under the European purchasers. The gradual absorption of the surrounding properties in this way will in time make the Bandarapola Estate Company one of the largest Companies in the island. Sir George Pilkington, one of the directors of the Company, came up on a visit to the estate today, accompanied by Mr. Hugh Fraser. They drove to Bandarapola round Suduganga, and had a look over the new clearings on that side. After paying a flying visit, Sir George left for Kandy this evening with Mr Fraser.—*Matale Cor.*, March 6th. Local "Times."

THE SA TREE IN TEA CULTIVATION.—Referring to the letter on this subject which we reprint from the *Indian Agriculturist*, our contemporary says:—

We venture to think that Mr. Bamber, whose letter appears elsewhere, is labouring under a misapprehension. Dr. Watt's report has not appeared, and it is therefore premature to discuss his discoveries. At the same time, we would remind Mr. Bamber that neither he nor Dr Watt are the discoverers of the action of certain leguminous plants in nitrating the soil through the agency of root-warts. In a recent issue of the Agricultural Ledger, indeed, Dr. Watt gave the history of that discovery. He there maintains that investigators in Europe had restricted the formation of nitrogen-forming warts to the Papilionaciæ. The *Sa* tree (Albizzia stipulata) belongs to the Mimoseæ, and should therefore not have nitrogen-forming warts on its roots. Now the discovery that it does possess such warts is the discovery which Dr. Watt claims to have made. Mr. Bamber says that he also had made that discovery, but we do not find that the quotations from his book support this statement. Dr. Watt has every right to say that he was the first to publish the fact that a number of the Mimoseæ forms on its roots nitrogen-giving warts. As to the practical aspect of the case it would seem that until Dr. Watt urged the cultivation of indigenous pulses as green manure, Mr. Bamber's recommendation for ground-nut, gram or lentils for the purpose received at most only a passing consideration. We doubt very much whether any of the pulses mentioned by Mr. Bamber would be half so useful as the Mati-kalai, specially recommended by Dr. Watt. Be that as it may, the value of a leguminous green manure, though well-known in Europe, seems to have been too long neglected by tea-planters.

FOR A SPECIAL DUTY ON TEA.

TEA MEN TO APPEAR BEFORE HOUSE COMMITTEE OF CUSTOMS.

THEY WILL PRESENT PETITIONS FROM THE TEA TRADE—VIEWS OF PROMINENT MEMBERS OF THE LOCAL TRADE—NO AGREEMENT AS TO THE AMOUNT OF DUTY TO BE CHARGED.

Members of the Committee of the Tea Trade of the United States will appear this afternoon, before the House Sub-Committee on Customs at Washington, to argue in favor of the imposition of a specific duty on tea.

The Committee will, it is understood, present a petition signed by nearly every important tea house in New York city, and will also present similar petitions from other large centres.

A representative of this journal, spent some time in the tea district on Saturday, in conversation with people engaged in the various branches of the trade; and found that the organized movement to restore the duty on tea is steadily gaining ground. Those in the trade in this city are almost unanimous in its support. The arguments advanced in its favor are varied, but the end in view is the same. They are not agreed as to the amount of duty to be charged, but it is generally maintained that a specific duty is absolutely necessary to effect an improvement, and it is confidently asserted that an improvement in the quality would bring about an increase in the consumption, and that tea would very soon become a popular beverage, as is the case in countries where a duty is levied. The result, they argue, would be satisfactory to all. The Government would receive a welcome addition to its revenue, the public would once more have a wholesome palatable beverage and a much needed improvement would take place in the tea business.

Appended are a number of interviews with practical tea men who are requested to give for publication their ideas on the benefits to be deprived from a specific duty.

Mr. Thos. A. Phelan, of Geo. W. Lane & Co. 93 Front Street: "There is hardly another article upon which a duty could be laid and at the same time benefit the people. Good tea is an economical beverage and an increase in consumption would be a National benefit. The only way this can be brought about is by the Government imposing a duty, a specific duty, and the higher the duty the better the quality that would be shipped to our country. It is worthy of note that while hotels and restaurants charge the same price for a cup of tea as they do for a cup of coffee, the original cost of a cup of coffee is about five times that of a cup of tea."

Mr. Chas. E. Beebe of Beebe & Bro., No. 130, Water street: "The policy of this country for the past 25 years has tended to fill this country with teas that cannot be shipped elsewhere, for the tea planters will always send their inferior grades to the country that does not charge a duty. They would be foolish to do otherwise, as they can afford to sell their goods here for less than the amount of duty which they would have to pay to get them into other countries. In fact anything they receive above the freight and other incidental charges is so much profit. A general prejudice against tea is the result of the admission into the country of such teas."

Messrs. Howlet & Lee: "What we want to revive the tea business is a specific duty of 10 to 25 cents a pound. An ad valorem duty would do no good; in fact, we think it would, if anything, create a worse state of affairs than exists at present, if that is possible. It is disheartening to see the consumption annually falling off, and we believe it to be directly due to the fact that consumers are given so much worthless, unwholesome quality. It is at present difficult for them to get good tea at any price.

Mr. E. M. Payne, 132 Front street: "The efforts that are being made to improve the condition of our tea trade by eliminating from our market all worthless low grade colored teas, whether done by legislation or education, is to be commended by every honest dealer and lover of pure tea.

"A moderate duty on pure tea, with a prohibitory one on all colored and adulterated tea, would be a blessing to every consumer, and especially to the poorer classes, who are the principal consumers of these low grade colored teas, for which they pay exorbitant profits to the retailers, actually receiving less of the pure essence of the tea in one pound than they would receive in one-quarter the quantity of the good article.. These low grade teas bear the same relation to fine teas that the coarse, outside, ground-trodden, worm-eaten leaves of the cabbage bear to the tender, nutritious leaves of the head. Are these teas poisonous? The tea tester says no, but I claim that the tea experts are no authority as to whether these teas are poisonous; they are too good judges of tea to put filthy stuff in their mouth, and would no sooner drink a cup of it than they would drink a cup of water from a Chinaman's bath.

"Too little importance is placed on the benefits of good tea and the injury of bad tea on the human system. The alkaloid, theine, is craved by nearly all the human race. With the great masses a good tea satisfies that craving, while a poor tea only partly satisfies it, so that tobacco, snuff, morphine or liquor is resorted to. Statistics will bear me out in the statement that where the laborer uses good tea there is far less intemperance by the use of tobacco and liquor in that family than where the commonest teas are used."

Mr. F. S. James, of the firm of Fraser, Farley & Varnum, an old and prominent house of Yokohama, Japan, and who has lately arrived from Japan, said,

"I have read, with interest, the various correspondence relative to tea duty, and as I am a tea packer I should like to give you my views on the subject.

"In my opinion a duty on tea would be a great benefit, not only to tea drinkers, but to tea importers, for the reason that it would keep out the trash and deleterious leaf that now reaches the States.

"In Japan this poor quality is grown in an almost wild state, near Nagasaki, and also in Mino, and is principally used for mixing purposes.

"A duty would exclude this from being imported and raise the standard of excellence, and the tea drinking portion of the people would gradually learn to appreciate leaf of good quality and help in time to increase the consumption of the article.

"The importer would benefit, because he would have to deal in a better article and reduce the risk that he at present runs in, having his teas rejected by the Custom House inspectors on account of poor quality.

"The Japanese Government have tried and are still using their best efforts to keep the growers from bringing trash to market, as it recognizes that the poor quality of a great deal of the tea now being shipped is spoiling the trade, and if this Government would only help it by levying a duty, the commonest sorts would entirely disappear and become a thing of the past."

Following is a complete list of the members of the tea committee:—Mr. E. Tomlinson, of Millikin-Tomlinson Co., Portland, Me.; Mr. A. S. Woodworth, of Robinson & Woodworth, Boston, Mass.; Mr. Fred'k Mead, Jr., of Fred'k Mead & Co,, New York; Mr. Geo. H. Macy, of Carter, Macy & Co., New York; Mr. M. P. Heraty, of E. J. Heraty & Co., Philadelphia; Mr. Geo. N. Crouze, President New York State Wholesale Grocers' Association, Syracuse. N.Y.; Mr. Geo. E. Lavenack, Buffalo, N.Y.; Mr. Wm. H. Brace, of Phelps, Brace & Co., Detroit. Mich.; Mr. Greame Stewart, of W.M. Hoyt & Co., Chicago. Ill.; Mr. Abel P. Upham, of Sprague, Warner & Co., Chicago, Ill.; Mr. F. Sanders, of Sanders & George, Baltimore, Md.; Mr. P. H. Kelly, of The P. H. Kelly Mercantile Co., St. Paul, Minn.; Mr. M. J. Brandenstein, of M. J. Brandenstein & Co. San Francisco; Mr. F. H. Krenning, of F. H. Krenning & Sons, St. Louis, Mo.; Mr. H. E. des Bordes, of Preston, & Stauffer, New Orleans, La., Mr. J. Wilcox, of The Rotan Grocery Co., Waco, Tex.; Mr. E. A. Willard, Secretary.

The Sub-Committee on Customs is composed of Representatives Dingley, Payne, Dalzell, Hopkins, Grosvenor, Crisp, and Turner.—*Journal of Commerce* (N.Y.), Feb. 17.

LONDON CINNAMON SALES.

The information to hand by the last mail regarding the Quarterly Sales of Cinnamon held in London on the 24th ultimo, is of even a more cheering description than the brief telegram on the day of the sale led one to expect. The Sales were reported irregular, though with a slightly upward tendency, and about 800 Bales were said to have been sold. We now find that the offerings were as many as 1,792 Bales, which though smaller than in November last, when 2,817 Bales were offered—an excessive supply for even the usually heavy sales at the end of the year—were greatly in excess of the quantity offered during the corresponding sales of the previous year, when only 766 Bales were offered. Of these 1,792 Bales, 1,207 were knocked down to bidders in the room, after good competition, at prices ½d to 1d higher than ruled at the November Sales, and about one-half of the remainder found buyers immediately after the auctions. The price of First Qualities of superior spice ranged from 1s 1d to 1s 5d per lb.—ordinaries fetching 11d to 1s; Seconds from 1s to 1s 3d, and 10d to 11d; Thirds 11d to 1s 1d and 9d to 10½d; Fourths 9d to 10½ and 8d to 8½d per lb.

Now, these prices may be considered nothing remarkable, as compared with those which ruled, say 20 to 25 years ago. True enough, but they are very good as compared with those which obtained 10 to 15 years ago. The really satisfactory feature in them is, we think, their uniformity. It will be remembered that at the August Sales there was considerable inflation, and ordinary sorts fetched as much as some of the best known brands of Superior Cinnamon, and in some cases secured even higher bids. It was apparent that the Sales were not *bona fide* throughout, that some of the bids were fictitious; and the explanation was that some speculators having imported large quantities of the spice, in anticipation of a rise in price consequent on the small offerings that were expected through the droughts which had distinguished 1894, ran up he market to save themselves loss through the imports having been beyond expectation. It was naturally expected that the result would be a serious fall in prices shortly after; but they were maintained; and although at the November Sales there were not the wild bidding and fanciful prices which had distinguished August, prices were by no means disappointing. The removal of artificial bolstering had not produced a violent run down; there was no demoralization in the market; and where prices receded, it was to their fair and normal limit. The ordinary sorts, which had been unduly inflated, did not rush down below their true value; the superior kinds, which had shared moderately in the advance, receded somewhat; but the averages compared favourably with those which had ruled for years past. This was a great gain, as it was feared, not only that the operations of August would seriously unsettle the market, but also that the rushing of large quantities of the spice into the London market under the stimulus of the extravagant bids at the August sales, would lead to a heavy fall. As we saw at the time, the November sales passed off fairly, notwithstanding that as many as 2,817 bales were offered, and that most of the parcels found buyers. The steadiness of the market and maintenance of prices for another quarter, after the experiences of two previous sales, are decidedly cheering features; and cinnamon growers may now fairly believe that the demand for their spice, which had been slack for many years past, is decidedly better; and the proof of it is in the uniformly satisfactory prices which have ruled in the London market. The leading Kaderane Brands showed an advance of quite 1d—the highest price for Golua Pokuna having been 1s 4d in November, while last month it was 1s 5d. It is in common sorts, however, that the maintenance of prices must be regarded with special satisfaction. These constitute the bulk of our exports, and hitherto rarely went beyond 8d to 9d. At the last sales, the spice of the C. H. De S. (De Soysa) marks sold up to 10d and 10½d; and notwithstanding that they were "unworked." Working is an operation which the Dock and Warehouse Companies indulge in for their own profit. It consists in undoing and redoing every bale at double or treble the cost of careful sorting and baling here, and objections to this costly and needless proceeding were met by the statement that the trade would not look at unworked spice. This was rather a reflection on the honesty of exporters here; but unworked cinnamon has been gradually working its way in the market; and now that it has the support of so influential a brand as C. H. De S., it is sure to be adopted. We congratulate Cinnamon Proprietors on the satisfactory outlook for their growths in the London and local markets, and append the report on the last sales by a leading firm in the trade:—

London, 26th Feb. 1896.

Cinnamon.—At the first auction of the year held on the 24th instant, 1792 Bales Ceylon were catalogued against 2,817 bales at the November sales, and 766 bales at this period last year. There was good competition and 1,207 bales were disposed of under the hammer at generally better prices, chiefly at ½ to 1d per lb. above November sales rates and since the auctions some 250 bales of the bought in lots are reported sold making a total clearance of close upon 1,500 bales.

"Firsts" superior 1s 1d to 1s 5d good to fine 11d to 1s.

"Seconds" superior 1s to 1s 3d, good 10d to 11d.

"Thirds" superior and fine 1s 1d to 11d medium to good 9d at 10½d.

"Fourths" good to fine 9d to 10½d and fair ordinary 8½d to 8d per lb.

Of Chips there offered 634 bags of which 250 bags were cleared at 3d to 3½d per lb. Quillings realized 5½d to 8½d per lb.

The stock here is 4,585 bales Ceylon against:—

1895.	1894.	1893.
3,385 bags.	3,515 bags.	3,520 bags.

The next auctions are fixed for the 1st June.

Forbes, Forbes & Co., Limited.
James J. Forbes, Managing Director.

TEA PROSPECTS.

Tea Report of Messrs. Gow, Wilson, and Stanton of 28th February, apart from its general interest, is deserving of notice as embodying statistics for eight months from 1st June last relating to Indian, Ceylon, and China teas. The figures before us are eminently gratifying, save in one particular—price. In all other respects, Ceylon shows to advantage in the comparison. It is some time now since China was dethroned from its pre-eminence, and had to give place first to India, and next to Ceylon too; but the general reader may be startled to find how far the great celestial Empire lags behind our little island in the custom it commands in the British Isles and the London market. Even some of those specially interested in tea may not be

aware that the quantity of China tea entered for home consumption is only about one-third of what is taken from our produce. Taking the figure for the eight months from 1st June 1895 to 31st January 1896 for the last four years, we find that in 1892-93, the quantity of Indian tea on which duty was paid at all Bonded Warehouses in the United Kingdom, amounted to 71,350,321 lb., against 43,339,624 lb. from Ceylon, and 23,389,347 from China. The percentages were thus 52, 31, and 17 respectively of the total quantity. Each year has seen a rise in Ceylon teas and a fall in China teas, until for the 8 months ended the 31st January last, our ratio stood at 35 per cent, against China's 12 per cent. Our gain has thus been 4 per cent, and China's loss 5 per cent—India having gained during the year 1 per cent. And it is herein, we have cause for special satisfaction, that we do not yield even to our big neighbour! We are quite prepared to rejoice over India's successes, as everything that makes for the larger consumption of British grown teas is a gain, so far as it means the displacement of China; but despite brotherly feeling and comradeship, comparisons are inevitable between the two countries, and Ceylon shows to advantage in the comparison. From 52 per cent 4 years ago, India advanced to 53 per cent the following year; but she has not been able to gain on it—53 being the percentage for the last two eight-monthly periods. Not that her figures have been stationary, for she has advanced, year by year, from 71 million lb. in 1892-93 to 80 million lb. in 1895-96; but her advance has only kept pace with the increased consumption. Ours has gone ahead of it! Hence it is that our percentage has increased by 4, while India's has advanced by one. Thus, whereas the total quantity on which duty is paid has risen from 139 million lb. to 151 million within the four years, the increase in Indian tea has been (roughly) 9 million lb., and in Ceylon, too, 9 million, while the decrease in China has been about 5 million lb. The proportionate advance of Ceylon has been greater than that of India.

When we turn to the quantity of Tea exported from Great Britain—the figures are, of course, quite independent of those relating to home consumption—we again find Ceylon ahead of India, and in this comparison it is more distinctly so. Thus, while in 1892-93, the re-exports were almost the same—the figures for India being 2,167,931 lb., and for Ceylon 2,205,760—every year the distance between the two countries has widened, till the eight months under notice show 4,785,867 lb. of Ceylon Tea exported from Great Britain, against 2,593,201 lb. of Indian. For home consumption, the proportionate rise of our Teas has been greater than that of Indians, and for export our Teas have been more largely in demand. So long as the former fact remains, the latter cannot be turned to our reproach, as indicating a desire to get rid of our Teas. China Teas seem to be imported chiefly now for re-exportation; but even there the trade has been dwindling down; for whereas nearly 20 million lb. of China were exported in 1892-93, the figures for 1895-96 are 12¾ million. This fact and the diminishing consumption of China Teas in Great Britain, as evidenced by the figures we have quoted in the first paragraph of our article, show how steadily British grown Teas are rising in public favour.

The one point in the situation which, as hinted above, fails to give satisfaction, is the price of our Teas as compared with India. The "standout" Teas of India are almost invariably higher priced than ours; and in the catalogue before us, we have marks which fetched from 1s 2¾d to 1s 3½d per lb; whereas our highest figures are 1s 0¾d to 1s 1½d. Often, the difference is even greater than a penny or two. One explanation may be that with a much larger outturn, finer Teas can be more easily manufactured; but that explanation cannot avoid the significance of the other fact, that the Indian weekly average is, too, almost always higher. For the week under notice, the Indian average was 9½d against 9¼d for the corresponding week last year; while our average had fallen from 9d last year to 8¼d. A larger outturn might excuse a lower average; but here India claims a higher average. We do not seek to explain the fact, but we desire to bring it prominently to the notice of our planting friends, so that they may make note of it, ascertain the cause, and, if possible, devise a remedy. The Island has for a long time maintained not only a high position, but even a pre-eminence, for its products. We need only mention coffee, cinnamon, cocoa, plumbago, and, to some extent, tea. Is there any reason why our teas should take second place? We are, of course, aware that we are India's junior in the contest; that elevation tells, and India has a wider range of highlands; and that the bushes in India have an appreciable rest, while ours are cropped all the year round. Is the explanation to be found in these circumstances? If not, has there been any growing carelessness in manufacture, or in cultivation, or in packing, which has been operating against us? It is for tea experts to decide. Then, what about all our teas being forced for sale into one day in the week? Can justice be done to them within the time allowed for tasting and bidding? These are some of the questions which demand an answer; and it will be for the Planters' Association to say whether they should not be investigated by a Committee.

TOMATO GROWING AT THE AGRICULTURAL SCHOOL.

We have had the pleasure of seeing and tasting some splendid tomatoes grown on "Cinnamon Sand" at the Agricultural School—by Mr. Rodrigo, the Dairy Manager, who has had a very successful season with a garden of tomatoes. The 7 fruits sent us which do not of course represent the average size, weighed over 3lb. and were very fine in taste.

THE HOME COFFEE DUTY.

Although it is certainly the case that our interest in the above topic is relatively small to what it was in the palmy days of coffee growing in this island, we are pleased to think that some of that interest yet survives, and that it may even some day increase. Without doubt there is a survival of it sufficient to ensure some local sympathy with the effort made by a deputation which recently waited upon the Chancellor of the Exchequer to advocate the abolition of the existing duty on the article. From some cause or other the consumption of coffee has been for many years steadily on the decline in the United Kingdom. It was stated by the deputation that this decline had amounted to about a million hundredweight since 1873. It is difficult to realize that the imposition of the existing duty can account for this. The

charge of it upon the individual consumer must be too light to operate to the extent referred to above, and the Chancellor of the Exchequer pointed out with much pertinence that the reduction of the duty by one-half in 1873 had produced no increase of consumption whatever. It will probably be within the memory of many of our readers that when this reduction took place there were many of those concerned with the coffee trade who opposed it. Notable among these, if our memory serves us rightly, was Mr. J. L. Shand, who, we think, delivered a lecture at the Society of Arts in which he demonstrated that the reduction would be injurious to the interests of the Ceylon coffee growers. Apparently that view does not recommend itself to the present generation in the trade. This sees in a farther reduction the panacea for existing evils. But the Government is surely in the right in its convention that, were the relief of the duty on coffee to be granted the action would but herald similar demands with reference to other productions that might be languishing, and revenue, it is needless to point out, must be raised by some method of taxation. Altogether upon review of the paragraph sent to us, we are inclined to think that the Chancellor of the Exchequer had the best of the arguments with the deputation. We feel that the decline in the use of coffee must be attributable rather to the strong preference now shown for tea, than to what is a tax on the consumer of a very trifling character.

CINCHONA BARK.

(From *C. M. & C. Woodhouse's Report.*)

London, February 27th, 1896.)

BARK.—The public auctions held during January, comprised :—

		against	
971 pkgs.	East India		138 pkgs. East India
43 do	Ceylon		194 do Ceylon
2 do	Java		456 do African
733 do	S. American		229 do S. American
			50 do Java.

during same period last year.

SHIPMENTS FROM CEYLON 1ST JANUARY TO 3RD FEBRUARY.

1896	70,677 lb.
1895	46,815 lb.
1894	311,885 lb.
1893	469,306 lb.

Although shipments from Java have lately been heavy, and since 1st October show an increase of 1,200,000 ½-kilos as compared with last year, yet the statistics of bark in Holland for the year ending 31st December are decidedly favourable, and if the importers of Java bark showed a little more firmness, an improvement in prices would soon follow.

On the 18th instant the monthly sales were held in London and 2,731 packages were offered, against 1,761 packages in January. The bulk of the East India bark sold with fair competition at an average unit of about ⅝d per lb.

On the 20th instant 7,715 bales, 325 cases Java bark were offered in Amsterdam, against 6,401 packages in January. The manufacturing bark was estimated to contain 36,005 kilos of sulphate of quinine. Of these 6,251 packages sold at a decline of 6 per cent, the average value of the unit being 2.82 cents, against 3 cents in January.

The next sales in London will be held on 17th March, and in Amsterdam on 26th March.

Quinine has been very dull during the past month in the absence of orders from America. German on the spot is quoted 1s 1½d per oz., but to effect sales, a lower price would have to be accepted.

	1896.	1895.	1894.
	Cwt.	Cwt.	Cwt.
Imports, 1 month	3,684	5,529	3,641
	£	£	£
Valued at	6,531	10,045	7,406
	Cwt.	Cwt.	Cwt.
Exported, 1 month	1,769	4,424	2,624
	£	£	£
Valued at	2,485	7,856	3.806

Stock of Quinine 31st January 1896, 1,963,888 oz., against 2,701,568 oz. 1895.

The present value of British Sulphate of Quinine (Howards') in bottle is 1s 4d to 1s 5d per oz., against 1s 4d to 1s 5d per oz. last year.

The present value of German Sulphate of Quinine (best marks) on the spot is 13½d (nominal) per oz.

INDIAN PATENTS.

Applications in respect of the undermentioned inventions have been filed, during the week ending 29th February 1896, under the provision of Act V of 1888 :—

For a Cleaning apparatus for the Acme Tea Sorting Machine.—No. 223 of 1895.—George Murray Collom, engineer and tea planter, care of W. G. Forbes, Esq., Her Majesty's Mint, Calcutta, for a cleaning apparatus for the Acme tea sorting machine or other machines of the reciprocating class. (Filed 18th February 1896.)

For Punkah-pulling Apparatus.—No. 229 of 1890. Mr. J. R. Romanes' invention for punkah-pulling apparatus adapted for the use of pulling punkahs in barracks, offices, private residences, etc. (Specification filed 14th November 1890.)

For Improvements in the Construction of Metal chests or boxes.—No. 253 of 1890.—Mr. Arthur Andrew's invention for improvements in the construction of metal chests or boxes. (Specification filed 24th November 1890.)—*The Indian and Eastern Engineer* March 14th.

PICKINGS WITH A LOCAL APPLICATION.

M. Berthelot, the new French Minister of Foreign Affairs, is now about sixty-eight years old. In his special domain of chemical knowledge he ranks among the first of his contemporaries. Chemical synthesis—the science of artificially putting organized bodies together—may be said to owe its existence to him. The practical results expected to flow from his experiments and discoveries are enormous. Thus, sugar has recently been made in the laboratory from glycerine, which Prof. Berthelot first made direct from synthetic alcohol.

Commerce has now taken up the question, and an invention has recently been patented by which sugar is to be made upon a commercial scale from two gases at something like 1 cent per pound. M. Berthelot declares he has not the slightest doubt that sugar will eventually be manufactured on the largest scale synthetically, and that the culture of the sugar cane and the beet root will be abandoned because they have ceased to pay.

The chemical advantages promised by M. Berthelot to future generations are marvellous. He cites the case of alizarin, a compound whose synthetic manufacture by chemists has destroyed a great agricultural industry. It is the essential commercial principle of the madder root, which was once used in in dyeing, wherever dyeing was carried on. The chemists have now succeeded in making pure indigo direct from its elements, and it will soon be a commercial product. Then the indigo fields, like the madder fields, will be abandoned, industrial laboratories having usurped their place.

But these scientific wonders do not stop here. Tobacco, tea, and coffee are to be made artificially. Not only this, but there is substantial promise of such tobaccos, such teas, and such coffees as the world has never seen, will be the outcome. Theobromine, the essential principle of cocoa, has been produced in the laboratory. Thus, synthetic chemistry is getting ready to furnish the three great non-

alcoholic beverages in general use. The tea plants, coffee shrubs, and cocoa trees must some day follow the lead of madder and indigo.

Tobacco will be obtained in a similar fashion. Professor Berthelot has obtained pure nicotine, whose chemical constitution is perfectly understood, by treating salomine, a natural glucoside, with hydrogen. —Grocery World.

Says the *Rubber World*:—

Not alone in coffee are the Straits Settlements becoming interested, but also, it seems, in respect to the cultivation of rubber. The *Ceylon Observer* has received a visit from the proprietor of a plantation in Lower Perak on alluvial riverside soil, which there are either planted, or about to be planted, some 500 acres of Parà rubber trees. The progress of the clearing, and the eventual harvests of rubber made by the experimentalist, Mr. Baker, will be watched with interest. In the past two years, however, a good deal has been done in Parà rubber in Ceylon, especially in the Kalutara and other low-country districts.

Here is an amusing parody of Goldsmith, describing the state of affairs in the West Indies :—

Ill fares the land, to hastening ills a prey
Where blacks accumulate, and canes decay ;
Plantains and yams may flourish, or may fade ;
You scratch and grow em—capital, a spade ;
But great estates, that erst on sugar thrived,
Once squatted on, can never be revived.

Mr. Westinghouse, the well-known inventor, manufacturer, and capitalist, confirms the announcement recently made that he has "solved the problem of converting coal into energy without the intervention of steam." In other words, he claims to have discovered a simpler method for generating electricity directly from coal. The reputation of Mr. Westinghouse is an ample guarantee of his sincerity. What he says he undoubtedly believes. And there is no man more capable than he of judging what a new device in the development of power will accomplish. It is, therefore, reasonable to assume that the time is at hand for the discontinuance of the use of steam generators in developing electric force. With all the progress that has been made in steam engineering, it has been impossible hitherto to utilise more than 10 per cent. of the power of the coal consumed. The waste of energy is enormous—beyond calculation. Of every 100 tons of coal consumed under boilers on sea or land, 90 tons are lost. It is claimed that Mr. Westinghouse's discovery will save more than half this waste. If this claim should be verified by experience, the discovery would mark an era in human progress. The apparatus which is to perform these wonders is very simple in construction. Turning coal into producer gas is the idea. In doing this the least number of heat units are lost, so that the resulting gas contains 90 per cent of all the heat units of the coal, while this gas has been used with great success for metallurgical purposes, it is not one that can be distributed for heat or light, so in the development of power the gas-producer apparatus must be located in close proximity to the gas engine. Thus the gas is easily converted into electrical energy. Since the alternating currents of 10,000 volts can be easily delivered and used, and by means of Tesla's multiphase motors be handled for the transmission of great power, it follows that sites can be selected for establishing the generating plants where coal can be conveniently delivered.

The report of W. F. T. McHarg, an assistant conservator of forests in the Upper Burma states that the rubber from the west of the Mindu hills comes from the *Ficus elastica* and not from a creeper as was generally supposed. The most interesting point in this discovery is that heretofore it was not believed that this tree flourished in such low latitudes, though the major part of the Burmese rubber output has always been known to be the product of the *Ficus* trees. As a matter of fact exploration does not point to any great increase in the output of rubber from the Mindu district but the news is of extreme interest from a botanical standpoint.

The report of the valuation survey throughout that country as published in the *Indian Forester* is of great interest, especially the portions that treat upon the chats with the heads of different villages who are but just learning that rubber is valuable, but do not know how to gather it. Those who have learned the work, however, are intelligent enough to appreciate that the trees must be allowed rest between the tappings, and that the incision must be such that the wound may heal easily. The trees are all tapped in cold weather, as then the yield is best. There are only a few men in a village who are expert enough to do the work, as it necessitates a great deal of climbing. They tap not only the aërial roots but the large branches, indeed, anything that is large enough to bear a cut.

———

The following will raise a smile among those who have not forgotten the Rev. H. R. Haweis, who visited us some time ago :—

While doing some pioneer lecturing during his recent visit to New Zealand, Mr. Haweis occasionally found himself regarded in a dubious manner by reason of his violin. On visiting an out-of-the-way place, where he was going to lecture on music, a deputation of local big-wigs came to the station to meet him and escort him to the place of entertainment. He alighted only to find that these august personages failed to recognise him, and he heard them inquiring of the stationmaster, "Hasn't the lecturer come by this train ?" "No," was the reply; "there's nobody come, but you little chap with the fiddle case."

THE TEA MARKET.

The Tea market exhibits the same distinctive feature that has generally charactorised it during the season—viz., a constant steady demand for "character" teas, which have not been abundant, whereas the preponderance of ordinary quality has kept the market frequently over-supplied, hence the lower range of prices that are current as against last year. With supplies for the season from India drawing to a close, attention will now be diverted chiefly to Ceylon growth. Recent imports comprise a marked absence of teas with point. The few invoices received from favourite gardens realise better averages, and that alone should encourage the manufacture of a better class. Java growth comes more into prominence as quality improves. China is almost a dead letter, but at current quotations surely must be worth attention on the part of blenders of tea "for price."—*L. & C. Express*, March 6.

MARKET FOR TEA SHARES.

Thursday evening, March 5.

Business still goes on increasing in the shares of all the better known Tea companies, and the Stock Exchange official list, besides numerous daily "markings" of business, shows rises during the week in the quotations for no less than seven out of the seventeen Indian companies included in the "List," while in one case (Singlo) there have been three successive advances, bringing the quotations of 10¾ to 11¼ up to 11—12, at which it now stands. This upward tendency now looks like being intensified up to the dates when the various companies issue their reports and announce their dividends.

Mincing Lane keeps firm for Indians, though easier for Ceylons.

FRESH ISSUES.—Dimbula Valley Prefs. seem "a shade" easier at ⅝ prem. to 1 prem. only.

CEYLON SHARES.—C. T. P. Co. Ordinary have been done at 26, and more wanted, even at this elevated figure. The Prefs. ask £17 upwards.

Eastern Produce and Estates shares have changed hands at 4¾.

Lankas have been taken at 5½, and now ask more money.

Ouvahs are said to have changed hands at 10¾ or thereabouts.

Ceylon Debentures.—Business, we hear, has been done in some of these at a premium for 4½ per cent.—*H. & C. Mail.*

DRUG REPORT.

(From the *Chemist and Druggist.*)

Feb. 29.

Oils (Essential).—Citronella, 2s to 2s 1d per lb. on the spot. Lemongrass, 2¼d per oz. spot, 2⅜d per oz. c.i.f. January-March.

THE TEA SALES.

To the Editor of the *H. and C. Mail.*

Sir,—I hoped to have seen last week some marked criticism of my proposals in regard to the public sales, but I suppose "the market" has "sucha big mind it takes a long time making up." Some suggestions have reached me since, which, I think have reasonable foundations. One is as regards the Indian sale on Monday, "That it should commence at 11 30 o'clock instead of 12 o'clock and be adjourned at 3 o'clock until Wednesday." Another is, "That all garden teas should be printed in separate catalogues and sold on a certain day, whilst Calcutta bought tea and reprinted or second hand lots should be printed also separately and sold by themselves. The reason for this suggestion is that many buyers do not taste any other than garden invoices, and it seems a great waste of time forcing them to sit hour after hour in public sale whilst Calcutta invoices, which they have not seen, are being auctioned. It might be supposed that the sellers' interests would suffer by this, but a moment's consideration will show that a roomful of indifferent people who are taking no interest in the sale, but chattering to one another, will do more harm to the seller than their absence would occasion. Some change will be needful before this year is out, and a free discussion may help to make that change in the wisest manner.—I am, &c.,

D. F. Shillington.

—*H. and C. Mail*, March 6.

PLANTING AND PRODUCE.

Manchester and the Distribution of Produce.—The good people of Manchester yearn to show their independence of Mincing Lane, and some of them seem to think that, thanks to the Ship Canal, they can do it. Direct shipments of tea and other produce arrive and are duly disposed of; and now an Association, called the Manchester Fruit Brokers, Limited, has been formed for the purpose of providing a ready means of distribution for tea, coffee, and dried fruit brought into the Cottonopolis district via the canal. The support of the leading shippers of the commodities named is stated to be assured, and it is expected that as a result this branch of the import trade over the waterway will show a considerable development. The new Association is to be continued on pure brokerage lines, similar to those which prevail in Mincing Lane.

Planting in Burmah.—Attention is being directed in India to the capabilities for planting enterprise offered by the Kachin Hills and the neighbouring immense tracts of primeval forest, but it is said that the extreme scarceness and dearness of labour in the district stands in the way. A correspondent who knows the parts in question believes "the whole country would be an ideal planting district, especially for tea." The climate is suitable and the soil good, but labour is most expensive. There will shortly be a railway, however, to Myitkynia, and produce would in no case be more than forty miles away. During the cold weather there is a steamer service on the Irrawaddy, and country boats, which are fairly cheap, are to be had all the year round." The tea-growing region he believes to be one of the best in the world. The height of the hills ranges from 1,000 ft. to 6,000 ft., and the rainfall is abundant—or, as he puts it, there is "a fertile soil and heaps of rain." The labour question has to be considered, and the chance in favour of introducing Chinese labour, which, by the way, is not always cheap.

The Dooars Planters and the Government.—The tea planters of the Dooars do not appreciate the leading strings which the Bengal Government wishes to employ in regulating the development of tea cultivation in that district. The proposed rules for the quantity of waste lands for cultivation are calculated to irritate the cultivator very considerably, and it is not surprising that the Indian Tea Association have expressed their opinion on the subject very forcibly. One rule lays down that a grant of land on an individual application shall be limited to 1,500 acres, the Government being under the impression that a garden of greater extent could not be worked with advantage. But the planters are of opinion that such a limitation would be most detrimental to their interests, as gardens of larger areas have invariably been the most profitable, the tendency being to amalgamate the smaller gardens and to carry on work on a large scale. If capitalists are restricted to comparatively small areas they will not care to invest. Another rule debars an applicant from applying again for more land until five years of his first lease have expired. The effect of such a rule would be to prevent successful planters of experience from extending their plantations for some years at least. This rule is also open to the same objection as the one restricting the limits of a garden to 1,500 acres. It is also proposed to introduce the sale of waste lands by auction, although this method has involved much trouble in Assam. These restrictions and the fact that only a thirty years' lease is to be granted are naturally resented by the tea planting community, who rightly think they are entitled to much more consideration at the hands of the Government.

The Duty on Coffee.—The Chancellor of the Exchequer has declined to entertain the idea of abolishing the duty on coffee. The deputation of coffee—traders which waited upon him last week had some good reasons to urge in favour of their proposal. The trade in coffee has been steadily declining for many years. Compared with that of 1873, the trade of the past year shows a decrease of a million hundredweight, so that the import of coffee is now only about three-quarters of a million and the exports half a million hundredweight. This decline is attributed to the hindrances thrown in the way of merchants by the system of warehousing in bond, which is necessitated by the duty. If, say, the traders, coffee could be imported free, it could be prepared for use here as cheaply as in Hamburg or Holland, and the trade would revive. The consumption of coffee in England has steadily diminished—in 1870, nearly one pound was consumed per head, and in 1894 only about two-thirds of a pound—so that the future of the trade evidently depends upon the extent to which the exports can be increased. The deputation pointed out that the Customs, to collect a paltry gross revenue of £174,000 on 249,000 cwt., controlled, and no doubt unintentionally, were fast destroying, the poor remnant of our great coffee export trade, which is still 447,224 cwt., or not far short of double our home trade. The Customs, in short, to obtain 1½d per lb. on coffee, have to take in charge three times the amount they get duty on, and hamper business. It was further pointed out that it had been for many years the policy of our finance Ministers to levy duty only on commodities bringing in some substantial revenue, and also that our successive Governments owed a debt of expiation to the coffee trade for so long allowing it to be the prey of the adulterator to an extent permitted in no other trade. The imports of chicory were more than half as much as the entire home consumption of coffee, so that on the average our consumers drink 0·36lb. chicory to 0·71lb. per head of coffee. This does not represent the adulteration, for a vast number of people even now drink pure coffee, while coffee may be, and is adulterated with 70, 80, and even 90 per cent. of chicory, and freely sold at the price of pure coffee. The deputation was listened to with his habitual courtesy and attention by Sir M Hicks-Beach, but he gave them no hope whatever of an abolition of the coffee duty. Sir Michael argued that the decline of the export trade was due to other causes, such as the tendency of Brazilian coffee to go to Continental ports rather than to London, and he could practically do nothing for the coffee industry.

The Quarterly Sales of Cinnamon.—Cinnamon has this year shown an advance in rates. The landings of the Ceylon description in London during the eight weeks ended the 22nd ult. were 1,435 pkgs. against only 585 packages in the same period last year. The total deliveries amounted to 1,080 pkgs. as opposed to 785 packages, and the stock at the above-mentioned date showed an excess of 1,245 packages, being 4,640 packages against 3,495 packages in 1895. The periodical sales held last week comprised 1,790 bales Ceylon, which met a fairly good demand for although the prices realised were not fully on a par with those lately current by private treaty, they were ½d to ¾d per lb. higher than in November, 1895, and the commonest sorts went at the extreme advance. Of the whole quantity offered about 1,400 bales were described a "unworked," and these parcels, as well as the remainder of the supply, found free buyers as the following rates:—Low to fine firsts at 9½ to 1s 1d, superior at 1s 2d to 1s 5d; seconds from 9d to 1s 1d, finest at 1s 3d; thirds at 8½d to 1s 1d; fourth and fifth qualities at 8d to 10½d; and broken (in three boxes) at 9d to 10d per lb. A favourite growth which failed to appear in the previous sales fetched the top market value.—*H and C. Mail*, March 6.

TEA IN AMERICA.

New York, Feb. 19.

We can only repeat the old, old story of a dull and unsatisfactory market. Recently, there was sold an invoice of Japan-Gunpowders at 33⅓ per cent. less than the actual cost of the manufacture in Japan, and which the owner would be glad to resell at 12c per lb. which is still below the cost of manufacture. Low grade teas are in buyers' favor, in fact every grade except such as may be in scant supply.

Today at noon the Montgomery Auction and Commission Company will sell 6,215 packages, viz.: 999 half-chests Moyune; 2,105 boxes Pingsuey; 36 half-chests Japan; 97 half-chests Japan, basket fired; 179 half-Congou; 25 boxes Capers; 197 packages India, Java and Pekoe; 30 half-chests and boxes Amoy; 333 half-chests Foochow—new season's; 2,304 half chests and boxes Formosa, including new season's.—*American Grocer.*

FOR A SPECIFIC DUTY ON TEA.

ARGUMENTS BEFORE SUB-COMMITTEE OF WAYS AND MEANS.

MEMBERS OF THE TRADE OF NEW YORK, BOSTON, AND OTHER CITIES MAKE STRONG PRESENTATION IN FAVOR OF A SPECIFIC DUTY—BY THIS MEANS THEY HOPE TO KEEP OUT THE POOR TEAS WHICH ARE FLOODING OUR MARKETS.

Washington, Feb. 17.—A strong presentation of the case for a specific duty on imported tea was made before the sub-committee of the Ways and Means Committee today, by the delegation of importers which came here for the purpose from New York, Boston, and other importing cities. Governor Dingley, the chairman of the full committee, presided, and the other members present were Messrs. Payne of New York, Dalzell of Pennsylvania, Steele of Indiana, Turner of Georgia, and McMillin of Tennessee. They all paid keen attention to the closely reasoned arguments of Mr. E. A. Willard, the secretary of the committee of the tea trade, who has done so much to give definite shape to the present movement. Mr. Fredk. Mead, Jr., of New York, Mr. Geo. H. Macy of New York, and Mr. Charles U. Shepard.

Mr. Willard stated that a duty of 10 cents per pound would accomplish what was desired in the direction of shutting out cheap and injurious teas, and that the United States was the only country that did not impose a duty. Governor Dingley inquired whether the bill introduced by Representative Cummings imposing a discriminating duty of 10 per cent ad valorem on teas from the west of Cape of Good Hope would not serve the desired purpose. Mr. Willard replied that he did not think that it would serve, because an ad valorem duty would make the duty so much heavier on the high class tea than on the low class that it would not effectually shut out the latter. Mr. Payne inquired whether the importers had not changed their minds since they advocated a discriminating duty before the committee in 1890. Mr. Mead replied to this question by saying, that they had not changed their minds, and that the bill then presented had an entirely different purpose. It was to shut out the English jobbers, who could carry teas so much cheaper because of the difference in warehouse charges and other charges in England. It was also aimed against the 10 per cent discriminating duty imposed by Canada upon tea.

"We do not come to talk about revenue," said Mr. Mead, "we want to shut out so much trash and poor tea which has come to such a pass that one-third to one-half of that imported has been sold at ten cents or less. It is all sold at retail at fifty cents a pound. People will not buy any tea at lower prices, but retailers give presents with it. Nearly all that trash comes here and shuts out good tea from this country. It has been going on for some years, but has grown to enormous proportions this year.

Mr. Payne inquired whether they did not mix it with good tea.

"O, no, sir; they do not mix it with good tea at all," replied Mr. Mead. "They give presents with it. Through the West and Southwest you really cannot get a cup of good tea. The consumption is fast decreasing."

Gov. Dingley inquired why the law prohibiting the importation of such bogus teas was not more effective.

"In the first place," replied Mr. Mead, "the law provides for an arbitration, and if the staff is shut out by an inspector the importer appoints one, and the Government one, and these two appoint a third, member of a board of arbitration, which is a mere matter of bargain, and the arbitration becomes a farce. People do not like, as arbitrators, to sit down on their neighbours' tea. In addition to that, if it is shut out in New York it slips in somewhere else. Mr. Bunn, the Appraiser at New York, told me that they had tried very hard with that law and found it impracticable to shut out this poor tea. There is a good deal of this tea that would not come under that law, because it is tea, although it is a very low grade tea. Mr. Bunn said to me that if Mr. Dingley wants him to come before him and tell him about this, he will be very glad to do it. He agrees with us that a specific duty on tea is the only solution for us He sent out a man through the West, and that report is in the Treasury. We cannot come to any conclusion how that law could be made practicable."

Judge Turner inquired the prices of teas and said, that he would like to hear from the consumer, but Mr. Mead assured him that the consumer could get no good tea now and none at retail less than 50 cents a pound.

Mr. Dalzell inquired how a specific duty of 10 cents would shut out poor tea for the benefit of good tea.

Mr. Meade pointed out that a duty of 300 per cent, the ad valorem equivalent of 15 cents a pound on 5-cent teas, would prevent bringing the lower grades into the country. He explained, also, that the tea was not brought here by American purchasers, but was sent by foreign shippers on credit and that if there was a duty these shipments would not be made. That, he declared, was the history of the matter during the war. We had no bad tea while the duty was on. The stuff that we got before that ceased coming. It was nothing but the specific duty that did it.

Mr. Willard resumed his argument and declared that one of the largest firms in the trade had given up buying tea, but was still handling it on these credits. This firm thought that the business ought to be stopped, and had signed the petition to the committee. The tea sold at 50 cents with presents thrown in, Mr. Willard declared, is absolutely injurious to the people, and there is nothing but the presents that makes it go. People were coming to know much less about tea than formerly.

Governor Dingley again put the question, "Mr. Willard, do you not consider it practicable to exclude injurious adulterated and bogus teas by a direct act appropriately framed with proper administration —to do it directly rather than indirectly?"

"No, sir: I do not," was Mr. Willard's reply. "We have given that subject as much thought as possible for twelve years. We have thought of everything we can think of, but the fact is, if we could improve it at New York and Chicago, it would come through some other port. It has been shut out of New York and comes back through Canada and Providence. That has happened. Every town that shuts it out and lets it in to some other town has lost some of its distributing trade. There is no way to do it except the universal barrier of a specific duty. That operates in every city, and there is no other way that it can be done."

Mr. Mead then read the opinion of a retailer printed, as he said, in the *Journal of Commerce and Commercial Bulletin* of Jan. 23rd. He said, in reply to Judge Turner, that he did not believe the subject could be reached readily by the Police powers of the States.

Mr. Charles U. Shepard, the South Carolina tea grower, attracted the keen interest of the committee by his descriptions of his experiments at Sommerville, S.C., twenty-three miles from Charleston, during the past half-dozen years. He said that he had recognized from the start that it was impossible to compete with the Orient on cheap or medium grade teas. He had obtained seeds of the best grades and there was no question about making the tea green nor about obtaining a good quality. He believed that the finer grades could be profitably produced here, and said that he had increased his production from 200 pounds three years back to 450 pounds two years ago and 850 pounds last year and expected to raise 2,000 pounds next year. He had made many errors and mistakes, but so far as he could determine he had succeeded in obtaining a yield of 1¾ ounces of good tea to the plant.

This petition in favor of a specific duty on tea was presented:—

"We, the undersigned, engaged in the tea trade of New York city, are in favor of a specific duty being placed upon tea. (Signed); Frederick Mead & Co., Geo. W Lane & Co., H W Banks & Co., E J Heraty & Co., The G B Farrington Co., G R Montgomery, S W Gillespie & Co., Hewlett & Lee, Irwin, McBride, Catherwood & Co., E D Morgan & Co., Mosle Bros., Middleton & Co., W P Roome & Co., E F Phelan, Russell & Co., L F Jackson, T A Sheffield & Co., Wells Bros., Purdon & Wiggins, Jos. H Lester & Co., Jos. Allison Gillet & Bro., W D Steele, Merritt & Ronaldson, R G Cary & Co. John Emmans & Co., Beebe and Brother, E A Willard & Co., J H Labarce & Co., Morewood & Co., Park & Tilford, Adams & Howe, Eppens, Smith & Wieman Co., Francis H Leggett & Co., Acker Merrall & Condit. The American Trading Co., Alex. McBride, Carter, Macy & Co., Hatfield & Benson, Jas. & Jno. R Montgomery & Co., Jas. E Armstrong, Hamilton & Cholwell, Geo. C Chase & Co., Jos. Stiner & Co., F C Jennings & Co., D R James & Bros., Busk & Jevons, Edward Rafter, Austin, Nichols & Co., Montgomery Auction & Commission Co., Callanan & Kemp, M Barnicle, Fearon, Daniel & Co., The Potter-Parlin Co. London & Johnson, J H Mohlman Co., L F Brenneeke & Co., Sonn Brothers, Koenig & Schust r, M N Packard Company, Berry, Wisner, Lohman & Co., Wright, Depew & Co., Jas. G Powers & Co., G Ahren's Sons, Geo. L Ayers & Co., W Grandeman, Apgar, & Garretson, Sam'l Crooks & Co., Sam'l S Beard & Co., Wm. A Leggett & Co., S T Willets & Co., Wells, Pratt & Co., Lewis DeGroff & Son, Jaburg Bros, R C Williams & Co., M A Van Benschoten, Seaman Bros." C. A. C.

—*Journal of Commerce*, (N.Y.) Feb. 18.

PALMERSTON TEA COMPANY, LIMITED.

The memorandum and articles of Association of the Palmerston Tea Company, Limited, are published in the *Gazette*. Among the objects for which the Company is established are.—To purchase the following estates, to wit: (1) Palmerston, situated in Dimbula, Ceylon, containing in extent 212 acres or thereabouts, for R248,500 currency or £4,500 sterling; and (2) Queensland, in Maskeliya, Ceylon, containing in extent 281 acres or thereabouts, for R149,000 Ceylon currency or £3,050 sterling, as from 1st January, 1896, upon such terms and conditions as may be agreed upon between the Company and the proprietors of the said respective estate, and for such purpose forthwith to borrow at interest the sum of £7,550 English sterling currency, upon primary mortgage of the said estates and premises or any part thereof. To improve, plant, clear, cultivate and develop the said estates, and any other lands that may be purchased, leased, or otherwise acquired, as tea estates, or with any other products, or in any other ways, and to construct, maintain, and alter any buildings or works necessary or convenient for the purpose of the Company. To acquire or establish and carry on any other business, manufacturing, shipping, or otherwise, which can be conveniently carried on in connection with any of the Company's general business. To purchase tea leaf and (or) other raw products for manufacture, manipulation, and (or) sale. To carry on the business of planters of tea and other products in all its branches. The liability of the Shareholders is limited. The capital of the Company is R1,000,000 divided in 2,000 shares of R500 each, with power to increase or reduce. The shares forming the capital (orginal, increased, or reduced) of the Company may be divided into such classes, with such preferences and other special incidents, and be held on such terms, as may be prescribed, by the articles of Association, and Regulations of the Company for the time being or otherwise. Shares have been bought by Messrs. Percy Bois, W. Moir, E. M. Shattock, G. H. Alston, G. Chapman Walker, J. E. Alston, and F. J. de Saram.

HIGH FOREST ESTATES COMPANY, LIMITED.

At the first annual ordinary general meeting of the High Forest Estates Company, Limited, held on March 21, the report and accounts were adopted. There were present Messrs. J. G. Wardrop (in the chair), G. Halston and G. W. Carlyon (visitors), C. A. Leechman, G. C. Walker, W. Moir, L. E. Edwards, C. J. Donald, and A. Thomson by his attorney G. W. Carlyon.

THE REPORT

was in the following terms:—

ACREAGE.

Tea in bearing	..	430 acres.	
,, in partial bearing	..	103 ,,	
,, not in bearing	..	53 ,,	
Coffee	..	51 ,,	
		——	637 acres.
Forest	..		952 ,,
Patna Land, &c.	..		43 ,,
			——
		Total..	1,632 acres.

The Directors have pleasure in submitting to the shareholders, the Accounts of the Company for the months of November and December, 1895.

The Expenditure on Working Account for these months was extremely high, as the Estate had to receive very careful treatment, it having been found necessary to change the entire system of cultivation and management, whilst a large new labor force had to be secured and trained to a proper mode of plucking. A marked improvement in the appearance of the tea is already visible, and to bring the bushes into a satisfactory condition, this special treatment will be required for some time to come,

The two months' working shows a loss of R1,926·98 on Estate account, and after paying preliminary expenses and Colombo charges, there remains a balance of R3,608·54 to be carried forward to the debit of the Current year's account.

During the period under review the sum of R17,470·21 was spent on Capital Account for Buildings, Machinery, and Nurseries.

It is intended to plant up with Tea this year 200 acres of jungle land as well as 51 acres now under Coffee, and a commencement of these extensions has already been made.

The expenditure on Capital account this season is estimated at R104,578, which, in addition to the above, includes the cost of rebuilding and enlarging the Factory, additional Machinery, the erection of two new Bungalows, and large accommodation for coolies, as well as Nurseries, etc. for further extensions.

The yield of Tea in 1893 is estimated at 200,000 lb. against an expenditure of R65,918. This sum includes the extra cost of manufacturing a considerable proportion of the crop on neighbouring estates instead of in the Company's own Factory, which, however, is expected to be ready for working in May.

The appointment of an Auditor for the current year will rest with the Meeting.

By order of the Directors.

Whittall & Co., Agents & Secretaries,

Colombo, 13th March, 1896.

MAHA UVA ESTATE COMPANY.

At the annual ordinary general meeting of the Maha Uva Estate Company, Limited, held on March 21, the report and accounts were adopted and a final dividend of 8 per cent was declared making 16 per cent for the year. There were present:—Messrs. C. A. Leechman (in the Chair) and G. W. Carlyon. Directors; Messrs. W. H. G. Duncan and A. Thomson (by their Attorney Mr. G. W. Carlyon) Mr. H. Tarrant (by his Attorney Mr. C. A. Leechman) and Messrs J. MacLiesh and E. S. Anderson (by their proxies Mr. G. W. Carlyon). The following is

THE REPORT:—

Acreage.

Tea in full bearing	..	144 acres
,, ,, partial bearing	..	155 ,,
,, not in bearing	..	306 ,,
Coffee amongst Tea (160 acres)		
Cardamoms in bearing	..	10 ,,
,, not in bearing	..	60 ,,
Grass	.. ..	15 ,,
Total Cultivated	..	690 acres
Jungle and Waste land	..	219 ,,

Total of Estate—909 acres

The Directors have pleasure in submitting to the Shareholders the Accounts of the Company for the past years.

The crops secured during the season were 105,472 lb. Tea, 2,453 bushels Coffee, and 615 lb. Cardamoms, which were sold at average net prices of 52 cents per lb. R16·80 per bushel and R1·18 per lb. respectively. The weather was generally favourable for tea and coffee, and the estimate of the former was largely exceeded, whilst the Coffee crop proved to be an exceptionally good one.

After making ample provisions for depreciation of Buildings and Machinery the net profit, including a small balance from 1894, amounted to R46,590·79. An Interim Dividend of 8 per cent was declared on the 3rd August last, absorbing R22,800 and the Directors recommend a final dividend of 8 per cent making 16 per cent for the year. Tho sum of R990·79 will then be left to be carried forward to the current year's account.

During the year 30 acres of land were planted with Cardamoms and 6 acres of old Cardamom fields with Tea, whilst about 5 acres of land were purchased from a neighbouring proprietor. The Directors are pleased to report that all the young clearings are progressing favourably.

Tho Capital was raised on the 1st January 1895, to R285,000 by the issue of 90 shares at par, and the Directors propose to offer the remaining shares (30) to shareholders in tho course of the year, at a premium to be fixed hereafter.

It is intended to plant this year 10 to 15 acres more land with Cardamoms and to replace with Tea the remaining 10 acres of old Cardamoms, which are now almost exhausted.

The estimates for 1896 are 127,000 lb. Tea, 400 bushels coffee, and 500 lb. cardamoms, against an expenditure on Working Account of R42 701. The estimate of coffee crop is merely a preliminary one, as it is impossible at this early period, to judge how much will be gathered by the end of the year. A further sum of R5,220 has been allowed in the Estimates for upkeep of young clearings and extensions, whilst an engine and boiler will probably be needed to provide against any temporary failure of water power.

In terms of the Articles of Association, Mr. C. A. Leechman now retires by rotation but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.—By order of the Directors,

Whittall & Co.,

Colombo, Feb. 28, 1896. Agents & Secretaries.

Coffee Planting in Klang.—The *Singapore Free Press* of the 11th inst. has an editorial article dealing with the abandonment of the blocks of "supposed coffee land" at Klang purchased by Messrs. T. N. Christie and W. Forsyth, in which it is said, that the "only party that has profited out of their loss is the Government of Selangor, which is well in pocket to the extent, in one of these cases we understand, of some $15,000, for which, as investigation has proved unfortunately, the Government, through no fault of its own, has given no valid consideration. The position is one out of which there is only one way, seeing that we are bound to credit a Government, until the contrary be proved, with the principles of a gentleman and man of business, instead of the predatory instincts of a Shylock. We do not, of course, assume for a moment that the Government will do anything else, than that which self-interest as well as ordinary honesty dictates, and we therefore, take it to be granted that the planters who have felt it necessary to throw up their land, on which they have sunk money in most cases in useless clearing, will be given the open option of selecting similar areas in any other localities within the State, with a fair time for the exercise of that option, say one year, in lieu of the handsome prices extracted from applicants for land by the easy process of putting up a limited number of blocks in one area and then putting the applicants against each other by dint of auction. We shall yet hope that by a liberal and honourable policy towards the disappointed planters the Selangor Government will do itself a good turn by still securing Messrs. Forsyth and Christie among the members of the planting community of Selangor. It is now in the power of the Selangor Government to make for itself a decent name amongst the holders of planting capital elsewhere. The world is wide and suitable areas for planting enterprise, are gaping by the hundred thousand acres in many tropical lands. It should be the policy of Selangor to tempt, not to choke off by a Scrooge-like policy, the men whose advent would be but the beginning of a procession of investors for where one eminent planter goes, others are ready to follow, relying on his judgment and on his experience. But where one or two eminent planters go and have reason given to them to refrain from staying, that is a lesson that will be greedily assimilated by hundreds outside who are watching the result of their experiment. We have some faith in the Selangor Government, if left to itself, and its own appreciation of the position.

THE ESTATES COMPANY OF UVA, LIMITED.

At the first annual ordinary general meeting of the Estates Company of Uva, Limited, held on 21st March, the report and accounts were adopted and a final dividend of 4 per cent was declared making 8 per cent for the year. There were present Messrs. G. W. Carlyon in the chair, C. A. Leechman and W. H. Figg, Directors; Messrs. G. J. Jameson, W. Moir, H. H. Capper, Mrs. E. Mandy (by her attorney Mr. J. Wilson), Mr. J. MacLeish (by his attorney M. J. Wilson), Mr. H. Tarrant (by his attorney Mr. C. A. Leechman), Messrs. A. Thomson and W. H. G. Duncan (by their attorney Mr. G. W. Carlyon) Messrs. G. S. Anderson and A. F. Souter and Mrs. C. Souter by their proxy Mr. G. W. Carlyon.

THE REPORT

is as follows:—

Acreage.

	Tea in full bearing.	Tea in partial bearing.	Tea not in bearing.	Coffee, Cocoa & Cardamoms.	Timber Trees and Grass.	Total Cultivated.	Forest & Waste Land.	Total.
Dammeria (including Mahatenne, Velloongalla and Tillycairn)	399	54	117	51	23	644	486	1130
Battawatte (including Forest Hill	209	110	226	43	24	612	135	747
Gampaha	282	50	127	71	82	612	257	869
	890	214	470	165	129	1868	878	2746

(Some coffee also remains amongst tea and timber trees on Gampaha and Battawatte estates.)

Tho Directors have pleasure in submitting to the shareholders the accounts of the Company for the past year.

Since the Company was formed, the Directors have purchased Mahatenne and Velloongalla estates as from 1st January, 1895, Tillycairn estate as from 1st November, and Forest Hill estate as from 1st September. The first three of these properties now from part of Dammeria, and Forest Hill is worked with Battawatte.

The prices paid were as follows, viz:—

For Mahatenne and Velloongalla, consisting of 409 acres of which 144 acres were under cultivation, R15,000 in cash and R15,000 in shares—total R30,000.

For Tillycairn, consisting of 70 acres, of which 25 acres were under cultivation, R3,500 in cash.

For Forest Hill, consisting of 383 acres, of which 196 acres were under cultivation, R44,240·13 in cash, R35,500 in shares, and R16,695·65, the amount of a mortgage payable in June next—total R96,435·78,

A re-survey of Gampaha Estate shewed the acreage to be 39 acres in excess of the approximate figures given in the Prospectus, and the total property now owned by the Company, including the purchases above referred to, comprises 2,746 acres of land as against 1,845 acres contracted for when the Company was formed.

The crops secured last year and the net average prices realized were as follows, viz:—

314,753 lb. Tea (including 71,654 lb. from purchased leaf) average R. 0·51½ per lb.
3,070 bushels Coffee „ „ 16·23 „ bus.
707 lb. Cardamoms „ „ 1·14 „ lb.
55 cwt. Cocoa „ „ 32·87 „ cwt.

in addition to which the sum of R6,759·36 was obtained by sale of green leaf, rents and receipts for manufacturing tea for other estates.

Excluding the special items of preliminary expenses and of interest to Vendors, the profit realized was equal to 10 per cent on the present paid-up capital of the Company a result which, taking into consideration the undeveloped state of the different properties, will no doubt be satisfactory to the shareholders.

After writing off all charges incidental to the formation of the Company and making due provision for depreciation of Buildings and Machinery, the ten profit available for Dividend amounted to R54,626·43 or 8·40 per cent on the paid-up Capital. An interim Dividend of 4 per cent., absorbing R24,600, was declared on the 15th August last, and the Directors now recommend the payment of a final Dividend of 4 per cent making 8 per cent for the year. A balance of R4,006·43 will then remain to be carried forward to the current year's accounts.

The new Factory on Gampaha Estate, referred to in the Prospectus, has been successfully completed.

The estimates for the present season aro 350,000 lb. tea from the Company's estates, and 66,000 lb. from purchased leaf, 970 bushels coffee, 500 lb. cardamoms and 50 cwts. cocoa.

The Directors propose making a further issue of shares during the year, due notice of which will be given to shareholders.

The first Statutory Meeting of the Company was called for the 15th February but had to be postponed *sine die*, owing to an insufficient attendance of shareholders. Under the circumstances, the Directers now tender their resignation and, being eligible, offer themselves for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

By order of the Directors, WHITTALL & Co., Agents and Secretaries.

Colombo, March 7th, 1896.

COFFEE PLANTING IN KLANG, SELANGOR.

THOUSANDS OF ACRES BOUGHT BY CEYLON PLANTERS, USELESS.

Confirming the brief statements we have already published as to the uncultivatible land which Messrs. T. North Christie, W. Forsythe and others had purchased, we now give extracts from a Singapore contemporary to hand this morning:—

In the *Straits Times*, of March 5th, a long letter appeared from its Selangor correspondent, describing the existence of "sour land" at Klang, and the temporarary and permanent abandonment of coffee estates there. We summarise the contribution as follows:—

The Klang land boom has received a serious check. A large proportion of the land sold by public auction in the months of February and August, 1895, has proved too sour for the cultivation of coffee in its present condition, and several owners have resolved to stop all work on their estates. Opinions as to how this untoward state of affairs has arisen vary considerably. Several experienced planters consider that the soil—particularly on the eastern side of the Klang-Kuala Langat road—lacks those constituent parts which are essential to the growth of coffee, while others, who are perhaps better qualified to judge, are of opinion that the difference between the soil on the two sides of the road is, in a great measure, if not entirely, due to drainage. But, although opinions vary with respect to the value of the different blocks of land purchased at auction last year, it is unanimously agreed that, through undertaking drainage, which it was either unable or unwilling to carry out within reasonable time, Government has done a great disservice to the planting interests of the district. On tho plans published previous to the selling of the land, various drains were shown as under construction. (The writer proceeds to describe how these lie, and their uncommenced or backward state.) Now let us see what the planters had been doing during the same period. One instance should suffice for comparison. The Datu Dagang Estate, now to be temporarily abandoned [corrected next day to complete abandonment.—ED. *T. of C.*], which was purchased by Mr. W. Forsythe in separate, but adjoining blocks, at the Feb-

ruary sale, is about two thousand acres in extent; and a very large portion of this property would have been immediately planted up had everything gone well. Nearly 400 acres have been cleared, and a number of substantial buildings have been erected. There are upwards of one hundred thousand plants in the nurseries, and several acres have been planned up. Of main and outlet drains alone, more than 14 miles have been cut. Even had the Government carried out its proposed drainage scheme, it would not equal the work which has been accomplished on this estate alone! But, of course, so long as the Government road drains remain uncompleted, the cutting of drains or any other work which may be done on the estate is so much labour lost. We may presume that the Government will not attempt to sell any more agricultural blocks at Klang for the time being, and that a commission will be appointed, without delay, to report on the drainage question * * * And now, what will become of that highly-valued Cultivation Clause? If the Government proves equal to the occasion and carries out its undertakings immediately, then work may be resumed on the estates which have been, or are about to be, abandoned. Possibly the owners will consider their land fit to be planted twelve months hence—five years hence—ten years hence —in any case it is evident that the Cultivation Clause will have to be waived so far as regards this land sold by auction, because no one but an experienced planter will be qualified to decide when the soil will be fit for growing coffee, and at the present time, this problem is beyond the ken of even the wisest. It is to be hoped that Sir Charles Mitchell will grant the Resident of this State a free hand to do all that can be done to re-establish the planting reputation of the district. There are of course, many hundred acres of excellent coffee land owned both by Europeans and by natives, in the neighbourhood; but it will be a serious matter if half, or two-thirds of all the land sold at public auction has to be permanently abandoned. Hopes for the future prosperity of the Federated States are mainly based on agriculture, and, therefore, no reasonable effort should be spared to maintain the good repute of the coffee planting industry.

Our Singapore contemporary, in the course of a leader commenting on the foregoing, says :—

Probably sales of coffee land in Klang in the districts affected will have now to be stopped, pending the settlement of the questions thus raised. Another question arises from the cultivation clause which the Governor is anxious to fasten upon planters who buy land from Government to enforce the clause on the planters who have just come to grief in Klang through the fault of Government runs counter to justice. These planters, in short, appear to suffer from official shortcomings, and the Governor should rouse the Selangor Government a keener sense of duty. The future of Federated Malaya admittedly depends mainly upon the progress of agriculture there, but planting enterprise cannot be expected to make head under official discouragement such as that now instanced in Klang. Disrepute has consequently befallen that district which has hitherto stood high in coffee-planting circles. The Governor has already shown that he is disposed to take planters' grievances into due consideration, and H.E. has now another opportunity to do justice to the planting community. It is to be hoped that H.E. will rise to the occasion.

MESSRS. FORSYTHE AND CHRISTIE AND THE FIASCO.

On the 6th inst., the *Straits Times* "gave away" the situation more completely. The article has some humour in its grimness, as will be seen by a perusal of what follows :—

THE END OF THE KLANG BOOM.

We stated yesterday that "the land boom at Klang may become a thing of the past, unless the Selangor Government radically mends its ways." The additional information tendered us is that the land boom at Klang is already a thing of the past, and that even a Government of archangels could not mend that matter, not even by digging drains the size of canals. The land boom at Klang has been exposed chiefly by Messrs. Forsythe and Christie, two planters of Ceylon now in Singapore. It seems that the local agents of these gentlemen bought for them by auction large areas of Klang land, intended for coffee planting. Now that Messrs. Forsythe and Christie have seen the land, they have arranged to surrender it back to Government, asking that the Government will be so good as to let them select other land in exchange.

It appears that the alleged coffee land at Klang, is land upon which coffee cannot grow. It is peat land; and coffee will not grow on peat. Still the land is not without its uses. If it be left alone for twenty-five thousand years it will probably develop into a magnificent coal bed.

In plain truth, the land boom at Klang arose from a mistake, a ludicrous mistake. A Malay had a small coffee garden there, and it produced some excellent coffee in wonderful quantities; and since the surface of the Malay's garden was peat, people jumped at the conclusion that coffee should be grown on peat. But it happened that only on top of that Malay garden was there peat; below that, the land was an excellent blue clay. The land that was purchased by auction has not merely a surface of peat, but it has 20 feet of peat, and the man who attempts to grow coffee on it would fail. There is a trifle of good land similar to the Malay's garden, which has been picked up by Tamboosamy Pillai and a Chinaman; but the rest of the land is said to be quite unfit for coffee.

Probably the Government will make no great difficulty about taking back the land and letting the unhappy buyers chose other soil.

So ends the Klang land boom.

The same paper appends the following further remarks :—

With reference to the statements contained in the Selangor Correspondent's letter, printed in our issue of yesterday, and, the remarks founded thereon, we are informed that these are wrong so far as they apply to the lands owned by the Ceylon planters, upon which work has now been permanently stopped. The Selangor Government may be guilty of not carrying out the drainage scheme promised and relied upon, but had they done so, it would not have saved the lands; and the blame attached to this unfortunate venture cannot be saddled on the Government, but rather upon the misjudgment of local planters, who to the last remained blind to what the owners of the lands consider to be conditions of so which carried failure written across them—drains or no drains.

The *Singapore Free Press*, after describing the hopelessly peaty condition of the abandoned land, remarks :—

The promptness with which the position was recognised by the chief investors concerned, has probably saved them and others from heavy future losses. Other men who have likewise ventured in on some of the adjacent blocks are likely with more or less alacrity to follow their example and throw up their newly acquired holdings. It is indeed fortunate that the chief losses are falling upon well-to-do outside investors, and not so much upon the younger men, who might have ventured all they had upon an enterprise that would shortly have spelt ruin to their planting fortunes.

We understand that what appears above only applies in the main to the group of contiguous blocks recently put up by Government, and probably to some other adjacent areas in the Klang district. In some places the layer is thin and the whitish clay soil can be reached at a depth that would not hinder planting. This latter applies to some of the native clearings.

This extremely regrettable fiasco affecting a large group of blocks of 320 acres each or thereabouts throws upon the Selangor Government the task of trying to undo the bad impression that even the above uncoloured statement of facts is bound to create. And as far as we can learn it is understood that the sympathies of the Selangor Government, now that it has had the various evidence laid before it, are with those who have been so greatly disappointed at the result of the more critical inspection of the soil of planting blocks sold in February of last year.—Local "Times," March 16.

THE KURUNEGALA ESTATES CO. OF CEYLON.

This Company is being formed with a capital of R1,000,000 divided into 1,000 shares. The Company is purchasing the following estates:—Ambapitia for R14,000, Bridstowe for R61,000, Pattiakande for R85,000, Matilda Valley for R7,000 and Morretenne for R19,000. The Agents and Secretaries of the Company are to be Messrs. Lee, Hedges & Co., and the Proctors Messrs. Julius & Creasy.

The properties have been valued at R201,450, and R186,000 is the amount to be paid. Of this the various vendors take R160,000 in fully-paid-up shares ranking for dividend from the 1st of January, 1898, and the balance in cash. Only 2,400 other shares are to be issued at present, payable as follows:—R20 on application, R20 on allotment; R20 on January 1st, 1897, and the balance a year later. During the next three years it is intended to open up 600 acres in tea and coconuts, and by degrees to plant up all the estates as far as possible with these products and wi h Liberian coffee and cocoa. No dividends are to be paid for the first three years; but, after that, very profitable returns may be looked for.

COFFEE PLANTING AT KLANG.

To the Editor.

Dear Sir,—In the interests of prospective, as well as actual, proprietors of Klang land in other countries I trust you will permit me to point out that although some thousands of acres in this district may be "peaty" and at present unsuitable for planting, by far the larger proportion is excellent land in every respect. Owing to the unfortunate fact that almost the entire area disposed of at the two auction sales was of the undesirable character which has since led several buyers to temporarily suspend operations, it seems not improbable that the coffee enterprise in Klang will in future be eyed with disfavour so extreme that the men who stick to their guns will be regarded by the uninitiated as little better than lunatics;—not that this will affect them much, as the laugh will be on their side in the end,—but it seems a pity that so erroneous an impression should get abroad and remain uncontradicted, and that the development of a really agricultural district should be retarded for so insufficient a cause.

It cannot, I think, be denied, in view of the disastrous effect which the recent severe extremes of wet and heat have had upon the already planted coffee, that this peaty land must be allowed to settle and consolidate under the influence of the elements before it can be safely cultivated, but that it is purely a question of time is manifested from the fact that the Datu Dagang's field, which is always quoted as the finest coffee in the State, is growing on soil precisely similar, but now settled down and dry.

On the other hand equally recently planted coffee, growing in stiff clay over a far larger area than that which has now been abandoned, may be seen in twenty different directions, flourishing vigorously and full of vitality and promise; and there is no getting over the fact that one of our Ceylon visitors who has recently stopped work on his present block, has put in five fresh applications for land, for wet land too, and, curiously enough, land situated in Klang.

To put the case in a nutshell, there is an abundance of good planting soil in the district and some which requires time to settle and which, if opened straight away, has been found wanting when subjected to drastic climatic trials.

Any amount of draining, whilst it would of course have helped the peaty land to consolidate, would never have rendered it fit for immediate planting, but it is none the less a matter of the greatest regret that the Government have not strictly adhered to and at all costs carried out their advertised drainage guarantee.

Sir Charles Mitchell's maiden effort at land reform has not proved an unqualified and brilliant success, but if he takes to heart the lesson which the recent *denouement* in Klang should teach him, he will realise that to make a pile in coffee is not by any means as easy or certain as it looks, and that the planter, it must also not be forgotten, is a direct revenue producer through the export duty on his coffee alone to the tune of from $4 to $5 annually, for every acre of forest he reclaims, and requires every assistance and encouragement, or he will turn his attention elsewhere.—I am, dear sir, yours faithfully, E. V. CAREY.

Kuala Lumpor, March 8th, 1896.

—*S. F. Press*, March 11.

IMPORTS OF COCOA TO THE U.S.A.

The total imports in 1895 were 29,969,518 pounds, valued at $3,198,659, a gain in quantity over 1894 of 9,229,391 pounds. South America furnished 16,127,046 pounds, of which 4,160.000 pounds came from Brazil. The British West Indies sent 9,555,537 pounds; other West Indies, 546,220 pounds; Central America, 332,733 pounds. Europe furnished 3,107,556 pounds.—*American Grocer*, Feb. 19.

THE TEA SUPPLY OF THE UNITED STATES.

The imports in 1895 were 97,883,051 pounds, a decree as compared with 1894 of 4,199,651 pounds. The total value of imports was $13,320,341. The movement for the year was as follows:—

	Pounds.
Imports..	97,883,051
Exports	768,143
Net imports or consumption ..	97,114,908

China supplied 51,458,868 pounds, or nearly 53 per cent. of the total imports; Japan, 39,914,508 pounds, or over 41 per cent.; United Kingdom, 3,696,192 pounds; all other countries, 2,813,483 pounds.—*American Grocer*, Feb. 19.

TEA IN AUSTRALIA.

TEA.—There has been a good inquiry for China tea, for which the market is firm. Sales comprise 450 half-chests congou at 4¼d to 4½d, 700 half-chests panyong at 5½d, 450 half-chests panyong at 6d, 400 quarter-chests S.O. pekoe at 6½d to 6¾d, and 100 quarter-chests buds at 5½d. Of Indians, 150 packages have been sold at 7½d to 8d. In Ceylons, 100 packages have been sold at 6½d. At the auction sale on Wednesday there was good competition for Indian tea at steady rates, the better grades being slightly firmer. Out of 445 chests and 462 half-chests offered, sales were made publicly of 397 chests and 462 half-chests, as follows:—Choice pekoe and orange pekoe, 11d to 1s; orange pekoe, 67 chests and 55 half-chests at 7d to 8½d; pekoe, 37 chests and 120 half-chests at 6½d to 7½d; pekoe souchong, 260 chests and 166 half chests at 6½d to 7½d; broken pekoe souchong, at 5½d. Of Ceylons, 238 chests and 30 half-chests were offered, and sales were made of 152 chests and 40 half-chests at 6½d to 10½d.—*Australasian*, March 7.

INDIAN PATENTS.

Specifications of the undermentioned inventions have been filed, under the provisions of Act V of 1888.

For improvements in the manufacture of tea and in apparatus therefore.—No. 260 of 1890.—Samuel Cleland Davidson, of Sirocco Works, Belfast, Ireland, merchant, for improvements in the manufacture of tea and in apparatus therefore. (From 24th March 1896 to 23rd March 1897.)

For fixing the bottoms and lids of boxes and chests.—No. 153 of 1891.—Mr. C. Bald's invention for fixing the bottoms and lids of boxes and chests used in packing tea, indigo, opium, coffee or other valuable produce. (Specification filed 7th December 1891.)—*Indian and Eastern Engineer*, March 21.

IMPORTS OF COFFEE TO THE U. S. A. IN 1895.

The total imports of coffee in 1895 were 642,318,319 pounds, valued at $96,512,370, or an average of 15·02 cent per pound. The total movement was as follows:—

	Pounds.
Imports ..	642,318,319
Exports ..	8,190,476
Net imports or consumption	634,127,843
Less lost in roasting 15 per cent	95,119,176
Roasted coffee consumed ..	539,008,667
1 lb. coffee makes 2 gallons infusion, making gallons consumed as beverage ..	1,078,017,334
Gallons coffee per capita ..	15.4
Beer consumed per capita ..	16.8

Coffee and beer are the popular beverages. The supply of coffee came from the following countries as follows:—

	Pounds.
Brazil ..	426,559,035
Other South American countries	73,484,884
Central America ..	52,320,272
Mexico ..	36,961,939
West Indies ..	18,532,745
East Indies ..	16,166,002
United Kingdom ..	4,205,826
Netherlands ..	4.035,274
Germany ..	2,739,813
Other parts Asia and Oceanica	2,228 255
France ..	1 870,717
Africa ..	34,616
All other countries ..	3,180,941
Total ..	642.318,319

—*American Grocer*, Feb. 19.

TEA ASSORTMENT AND BULKING.

As the season for manufacture is again approaching, at the risk of wearying our readers, we purpose reviewing (with regard to assortment and packing) Messrs. Stenning, Inskipp & Co.'s annual circular, which is always most interesting reading, more especially to young Managers. Unfortunately, Agents do not, as a rule, send these to their gardens; and Managers miss valuable information, more especially in these days of cutting things fine. With regard to assortment, we should say, the advice is sound that recommends only four grades of tea—Broken Pekoe, Pekoe, Pekoe Souchong and Broken mixed. It is unfortunately the tendency of young managers, to run to making six or seven grades, many of them with a view to getting into the "Honor" list, and to such an extent has this been carried within the last few years, that the work the Calcutta Brokers have had to do is simply appalling and cannot but indirectly act against the interests of good prices. It is true that sampling breaks are supposed to consist of at least 50 quarter, 30 half, or 20 full chests; but, many are sent below this, and brokers for their own credit, are compelled to sample or run the risk of having it thrown at their heads that they have "chucked the tea away." It would be well then, if our agency houses would insist on Managers adhering strictly to the rules laid down with regard to the size of breaks; business would be facilitated in every way, and the hard-worked broker would have a little more breathing time. As it is, the sampling work connected with Indian tea has increased so much of late years, that it is no wonder the strain has been almost too great for many of those engaged in it.

Loss in weight has come very much to the front, and as yet but little effort has been made to cope with it. We see no reason why the matter, if vigorously tackled, could not be checked. Let the Agents insist upon receiving the tea as per bill of lading and pilfering will soon stop. The River Companies, since they were unable to get the law altered removing them from responsibility, are very particular as to the bill of lading, and if so much as a box is stained with mud, it is carefully remarked upon on the margin; so that if the Agents in Calcutta, were as particular on their part in taking delivery there would not be so many complaints of shortage in weight. With regard to complaints from home of shortage, we think that this very often arises from want of knowledge on the part of the manager of the garden, and we venture to insert Messrs. Stenning, Inskipp & Co.'s remarks thereon in full:—"*Loss in Weight.*—As this occasionally gives rise to much dissatisfaction, we offer the following suggestions; that the gross weight of the packages should be a few ounces, say, four or five, *above* an even number of pounds, and that the empty package complete with lead, nails, bands, etc., be to a like extent *below* an even number of pounds. In weighing here, *i.e.*, in London, the gross weight is *reduced* to the even number of pounds, whilst the fare is *increased* to an even number of pounds. With regard to garden bulked teas it is imperatively necessary to put an equal quantity into each package of the break, and the quantity should be four or five ounces over the desired weight of contents, viz., if the packages are invoiced to contain 100 lb. tea each, not less than 100 lb. 4 oz. should be weighed in; test packages weighing here a fraction under 100 lb. are reckoned as 99 lb. only, or a loss of 1 lb. on each chest of the break. *Draft* of 1 lb. per package on all packages grossing 28 lb. and upwards is allowed to the buyers. When a gross of 129 lb. is exceeded, there is an additional change of 5d per chest up to 159 lb. *Marks on Chests.*—Nothing is wanted or is of any service here beyond 1st, garden mark; 2nd, description of tea; 3rd, garden numbers. Gross tare and net are not of the least use and should be discontinued."

Reading between the lines here, there is a great deal of useful information of which a great many planters may be quite ignorant. At the same time, we think that there is one point that might be made more clear, for instance, with regard to this question of factory bulking; these Brokers say that a uniform quantity of tea should be put in, and the gross should have a few ounces over an even number of pounds, etc. This would lead one to suppose that a record of gross, tare and net in the invoice was necessary; whilst, further on, with regard to marks on the boxes, they say that gross, tare and net should be discontinued. The two statements are quite contradictory, and we fail to see how putting it on the boxes is a matter of any moment; if it is necessary to keep a record of it, one would have thought it was the simplest way. One thing is certain, packages marked with it are taken for the American market; in fact, if you wish to sell your tea in America, it is imperative. We believe that Messrs. McLeod & Co. last year suggested to the Indian Tea Association, that it might be enough if the gross, tare and net were recorded in the invoice, but what the result of this representation came to, we never heard. We trust that our drawing attention to this ambiguity may be sufficient to bring an authoritative deliverance on the point from the Brokers, to whose circular we are indebted for so much useful information, and which we hope our young planters will read, learn, and digest, for we have been told that attention to these little details effects a saving of one to two per cent. on gardens delivering satisfactorily "*Factory bulked teas.*"—*Indian Planters' Gazette*, March 14.

A New Cacao Drier.—The Director of Public Gardens and plantations in Jamaica, Mr. W. Fawcett, states that having found a difficulty in meeting with a satisfactory dryer for cacao beans, he has been in correspondence and personal communication with Messrs. John Gordon & Co, London, who have designed a Cacao Dryer, which effects the regular presentation to the heated air of all parts of the surface of the beans, and is an improvement in this respect to the machines now in use.—*The Sugarcane*, March 2.

COMMERCIAL FIBRES OF TRAVANCORE.

The Palmyra Palm is widely distributed in the Trivandrum and Southern Divisions of the Travancore State, and owes its name to the Portuguese, who styled it *par excellence* "Palmier" or *the* Palm-tree. The tree is Botanically known under the name *Borassus flabelliformis*. This Palm is generally found in a cultivated or semi-cultivated state in Travancore: but, it is however, truly wild in tropical Africa. In the East it is found all over Southern India, east of the Western Ghauts, and away north beyond the Deccan. It is a toddy and sugar bearing palm, the former term being a perversion of the Urdu word "Thadi," which has been anglicised into "Toddy." The young germinating nuts (Panna kalanga) are boiled and eaten as a vegetable, and as they contain a considerable amount of starch, are fairly nourishing to the average native, though rather coarse to the English palate, and unless well cooked, indigestible. The leaves were formerly, and even at the present day, in out of the way villages, employed in the place of paper for the purpose of writing, &c. Some of the most ancient classic books of the Pali and Singhalese languages having been written on the leaves of this Palm, and which are in existence at this present day. The timber is exceedingly hard and durable, and is largely employed in house building purposes, more especially for rafters and joists, and being almost impervious to the attacks of the destructive White ant, is therefore highly prized. From the base of the petioles or sheathing leaf stalks is obtained a stiff, wiry, dark-coloured fibre. This was at first termed "Bassine" in the market, to distinguish it from "Bass" and "Piassava" fibres. It came into notice as a commercial product in 1891, when the high prices of Piassava induced the production of substitutes. At that time, even split rattan, dyed black, was requisitioned as a brush fibre. Palmyra fibre has steadily increased in quantity, and, contrary to what was at first anticipated, it has also risen in value; but, great discretion is necessary, as the mild but wily Hindoo, to gain weight, introduces a large quantity of water and refuse matter, and the cost of separating the really good fibre from the mass of second and third class stuff, and clearing it from foreign matter, adds considerably to its original cost. In 1892 Messrs. Ide and Christeson wrote:—"The chief objection to Palmyra fibre is that it lacks straightness, but experiments are being made in this country to overcome this defect, and should they prove successful, it is claimed by the importers and dressers, that Palmyra should, for wear, be found equal to the best Para." These anticipations have to some extent, been realised. Palmyra has now practically taken the place of West African Bass. The latter on the 16th September 1895, was "dull, business small, £14 to £23 per ton." While Palmyra fibre on the other hand was "good £26 to £34; medium, £22 to £25; common, £15 to £19 per ton." The natives of India, as we have shown above, are unconsciously copying the evil practices of the Indians of Brazil, in sending consignments of Palmyra to this country, in a damp and dirty condition. The result is, that the bales on being opened are found to be wet, and the fibre to a large extent perished and powdery. Should this short-sighted policy be further indulged in, we have no hesitation in saying, that the trade will be most seriously injured. Another fibre-bearing Palm of Travancore is the Bastard Sago Palm, variously known in the vernacular as *Chunda Panna*, *Anna Panna* and *Olati panna*. Botanically it is known as *Caryota urens*. This is a stout well grown palm, one of the handsomest of its tribe, bearing a smooth annulated stem 20 to 40 feet in height. As the Palmyra predominates in South Travancore, so this palm is found to flourish best in the central and northern portions of Travancore. It also is a toddy and sugar bearing palm. The flavour of both the fresh toddy and jaggery (sugar) being superior to that of the palmyra. When the tree arrives to an age of from 25 to 40 years, and its yield of sap is no longer paying, the tree is cut down, and its trunk is cut into blocks about two to three feet in length. These blocks are now split open, and the farinaceous and fibrous soft inner pith is cut out and chopped into small pieces. These are tranferred to a common paddy mortar and pounded until the farinaceous portion becomes detached from the fibros. The pulverized matter is now placed on a cloth, and water freely poured thereon, by this means, the farina is carried off into the vessel below, while the fibre and refuse matter is detained in the cloth sieve. The farina is allowed to settle, and supernatant water is poured off, and the farina or starch is dried in the sun. If a particularly fine kind of starch flour is required, this starch undergoes a further pounding in the mortar, and is again subjected to several drenchings of pure water. The fibre of this plant is technically known in the market as "Kittul fibre," and is extracted principally from that portion of the petiole or leaf-stalk that envelopes the stem of the parent tree. Mr. J. R. Jackson gives the following account of this fibre in Commercial Botany:—"Kittul fibre has been known in this country (England) for some 30 or 40 years, but it is only within the last 10 years that it has become a regular commercial article. When first imported, the finer hairs were used for mixing with horse hair for stuffing cushions. As the fibre is imported, it is of a dusky-brown colour; but after it arrives in England, it is cleaned, combed, and arranged in long straight fibres, after which it is steeped in Linseed oil to make it more pliable; this has also the effect of darkening it. And it indeed becomes almost black. It is softer and more pliable than Piassava, and can consequently be used, either alone or mixed, with bristles in making soft long handled brooms, which are extremely durable, and can be sold at about one-third the price of ordinary hair brooms. The use of Kittul fibre is said to be fast spreading, not only in the Home markets, but also on the Continent and America. The values in September 1895 were quoted as follows:—"Long, 10d to 10½d; No. 1, 7d to 7½d; No. 2. 2d to 2½d; No. 3, 1d to 1½d; per pound. Judging from the above quotations we are sure that there is a grand opening for the exporters of Raw Produce, as this palm grows to great luxuriance in the land lying between the backwaters and the Ghauts, up which they extend, in their wild state, to an elevation of something over 2,000 feet; but it is found to be most prolific in the gardens situated as above stated, from Kullitorry away up to the Northern Boundary. The still further North we go the more frequently it is to be met with. Messrs. Cameron Chisholm & Co., of Quilon have been to considerable trouble in developing the trade in Palmyra fibre in Southern Division. If some of the enterprizing firms at Alleppey or Cochin would be equally pushing, and undergo the same trouble, we have no doubt but that the "Kittool fibre" would soon form one of principal exports to Europe from this Coast. —*Western Star*, March 21.

TEA INSPECTION.

Thirteen years ago Congress provided that it should "be unlawful for any person or corporations to import or bring into the United States any merchandise for sale as tea adulterated with spurious leaf or with exhausted leaf, or which contains so great an admixture of chemicals or other deleterious substances as to make it unfit for use." That prohibition is executed here by an examiner from whose decision that a sample of tea is adulterated with spurious or exhausted leaves, or with enough chemicals to make it unfit for use, there is an appeal to a Committee of arbitration.

The language of the statute permits the importation of very inferior teas. The complaints usually are, not that the examiner rejects tea, but that he admits teas which importers think ought not to come in, and it is urged in support of this that there has been a decline in the quality of tea imported, and that the decline in the average consumption of tea is due to this decline in quality.

It is not customary for the Government to require imported goods to conform to any given standard of quality or purity. Generally speaking, an importer must settle with his own conscience and the consuming public when he imports a very poor grade of an article, or an article which is not entirely what it seems. The Government tests vinegar and alcoholic liquors, but not in the interest of the public health or the public purse; it is only in the interest of the national revenue; the duty to be assessed is based upon the amount of acid or proof spirits there are in the commercial vinegar and liquor. In like manner sugars used to be inspected because the amount of duty depended on the saccharine strength. In the case of drugs and teas standard of quality is insisted upon. Of teas it is only required that they shall not be fraudulent or injurious to health, and drugs, as to which the consumer has no possible means of ascertaining their purity, are required to conform to the standards of strength and purity established by the drug trade and recorded in the standard pharmacopia. The Government does not attempt to fix a standard, but it accepts the one fixed by the trade, and undertakes to exclude articles which according to that standard are fraudulent or injurious.

The establishment of a tea standard, therefore, by the Government would be quite without precedent. It certainly could not be done without legislation, and Congress would be reluctant to authorize the Secretary of the Treasury to define the quality of tea that should be admitted to the country. If the tea trade could agree on a standard, as other trades agree on standards of the goods they deal in, it is not unlikely that Congress would adopt such a standard and prohibit the importation of teas below it.

We have already pointed out why a discriminating duty against teas brought hither from the ports of Europe would not serve to keep out the teas of India and Ceylon, and also that the teas of India and Ceylon ought not to be excluded in the interest of the teas of China. A duty on all tea, while it is desirable as a revenue tax, will not be agreed to by this Congress, and it is not at all certain that it would keep out the rubbish if it were imposed. It is a fair question whether the imposition of a tax would not drive the importers of the very worst teas to see if they could not partly offset the tax by finding a still cheaper article to be sold as tea. The discovery of cheap substitutes and imitations is usually stimulated by an advance in the price of the article imitated. But, if the tax promised to be efficient, it is at present impracticable.

In regard to chemical adulteration there ought, of course, to be something more specific than the language of the statute. The mixture of tea with deleterious substances is not prohibited. It is provided that there must not be so great an admixture as to render the tea unfit for use. It is left to the judgement of the examiner and the arbitration committee to determine what amount of adulteration is injurious.

If the trade can discover any means whereby dealers in tea can be compelled to desist from giving away chromos and crockery that would be an advantage, for it would result in their selling real and better tea. That this can be readily accomplished we are not confident. So large a portion of the public is indifferent to what it eats and drinks, provided that with what it buys it gets a coloured picture or a butter plate without paying for it, that the prize packages of imitation tea people seem to have founded their business on—a fundamental weakness of human naturo. If the customers knew enough to go without their prizes, the dealers could afford to supply a better tea than that now offered without advancing their prices. The simple patrons of these places may suppose that the dealers give things away, but they do not. They take out of the quality of the tea all that the pictures and the orockery are worth. But so long as a great many people would rather buy unwholesome imitations of tea and have something given to them than to buy a good quality of tea, it is going to be very difficult to deal with the men who supply them with what they are willing to give their money for.

It is worth while for the tea trade to see if they cannot agree on some method of checking the importation of trashy teas. The movement to provide consumers with better grades of tea deserves every encouragement.—*Journal of Commerce Bulletin*, February 25th.

USES OF THE LEMON.

Doctors say, that lemons rid the system of humours and bile and leave no ill effect, and that weak debilitated people oftentimes may be greatly benefitted by a free use of them. Lemon juice should be diluted with water, or sweetened sufficiently, so that it will not produce a drawing or burning sensation in the throat. Clear lemon juice is very irritating; the powerful acid of the juice will cause inflammation if the use of it is continued any length of time,

A bilious attack may be soon overcome by taking the juice of one or two lemons in a goblet of water before ret'ring and in the morning before rising. Where taken on an empty stomach the lemon has an opportunity to work on the system. Continue the use of them for several weeks.

Lemons are an excellent remedy in pulmonary diseases. When used for lung trouble, from six to nine a day should be used. More juice is obtained from lemons by boiling them. Put the lemons into cold water and bring slowly to a boil. Boil slowly until they begin to soften; remove from the water and when cold enough to handle, squeeze until all the juice is extracted, strain and add enough loaf or crushed sugar to make it palatable, being careful not to make it too sweet. Add about twice as much water as there is juice. This preparation may be made every morning, or enough may be prepared one day to last three or four days, but it must be kept in cool place.

Lemon juice sweetened with loaf or crushed sugar will relieve a cough. For feverishness and an unnatural thirst often a lemon by rolling on a hard surface, cut off the top, add sugar and work it down into the lemon with a fork, then suck it slowly.

During the warm months a sense of coolness, comfort, and invigoration can be produced by a free use of lemonade. For six large glasses of lemonade use six large, juicy lemons; roll on a hard surface, so that the juice can be easily extracted. Peel and slice. Add sufficient sugar to sweeten and stir it well into the juice before adding the water.

Hot lemonade will break up a cold if taken at the start. Make it the same as cold lemonade, only use boiling water, and use about half as much sugar.

A piece of lemon or stale bread moistened with lemon juice bound on a corn will cure it. Renew night and morning. The first application will produce soreness, but if treatment is persisted in for a reasonable length of time a cure will be effected. The discomfort caused by sore and tender feet may be lessened, if not entirely cured, by applying slices of lemons on the feet. To cure chilblains, take a piece of lemon, sprinkle fine salt over it, and rub the feet well. Repeat if necessary.

Lemon juice will relieve roughness and vegetable stains on the hands. After having the hands in hot soap suds rub them with a piece of lemon. This will prevent chapping and make the hands soft and white.—*Rural Californian.*

CITRONELLA OIL AND ITS ADULTERANTS.

BY JOHN C. UMNEY, F.C.S.

In the leading article on "A Citronella-oil Arbitration," which appears in the last issue of the *Chemist and Druggist* easy physical tests are set out for the detection of kerosene in citronella oil. The exertions of Messrs. Schimmel to check the adulteration of citronella oil have unfortunately only been successful up to a certain point —namely, in causing the natives to cease the admixture of their oil with kerosene, and to look about for some other substance which is not so easily detected, and at the same time almost equally cheap. I have recently had the opportunity of examining several samples of citronella oil which contain no kerosene, but whose charac-

other than their specific gravity and solubility in per cent alcohol indicate admixture with another adulterant, possibly as observed on one occasion by Messrs. Schimmel & Co., one of the so-called wood oils derived from a species of Dipterocarpus, although probably not those from which the gurjun oil of commerce is derived (*Dipterocarpus turbinatus* and other species). Three of the oils may be taken as types of this form of adulteration and their characters are briefly as under:

SPECIFIC GRAVITY—The sp. gr. at 15deg C are somewhat high, being in the case of No. 1, ·9027 and No. 2, ·9034 and No. 3, ·9056. The oil which I have distilled from gurjun balsam has a sp. gr. of ·916 at 15deg C, whilst pure citronella oil distilled from fresh grass, rarely exceeds ·900.

SOLUBILITY IN 80 PER CENT ALCOHOL.—These three samples are readily soluble in alcohol of 80 per cent strength, in a proportion of one part in three, but on further dilution a turbidity occures, and after about eight to twelve hours a dark-brown deposit results.

OPTICA ROTATION—The optical rotation of the three oils is more lævo-rotatory than is usually found in pure citronella oil, being between −11deg and −13deg in a tube of 100 m.m.

FRACTIONATION—Differences are observable when fractionation of the oil is carried out. The following columns show a comparison of the proportions obtained at various temperatures from a sample of pure oil and these three oils respectively:—

Fractionation deg. C	Pure		No. 1	No. 2	No. 3
Below 200	6	per cent	6	9	8
200-205	7	do		7	4
205-215	12	do	13	8	12
215-225	30	do	17	18	16
225-240			38	43	32
Above 240	29	do	24	15	28

It will be noted that the proportion in the impure oils boiling from 225deg to 240deg C is greater in the case of Nos. 1, 2 and 3 than in the case of the pure oil. This is rendered more suspicious by the fact that the oils contain less geraniol (B.P. 231-232deg C)

PERCENTAGE OF GERANIOL—Experiments have been made with a view to determine the amounts of geraniol present in the pure and adulterated oils. The amount present, as shown by the acetylation process is, in the case of the pure oil, 64 per cent, and in all the pure oils examined falls between 60 and 64 per cent; in the case of No. 1 it falls as low as 52 per cent, No. 2 to 50·4 per cent, and No. 3 to 51 per cent. An important difference is shown in the saponifications figures of the pure and adulterated oils, the former being from 35 to 40, whilst the latter vary from 48 to 54. This difference is probably due to the presence of resin acids in the adulterant rather than a greater proportion of esters.

It is necessary, therefore, to take into consideration not only the specific gravity and behaviour of the oils in alcohol of 80 per cent strength; but also to observe the optical rotation, which should not exceed −8deg in a 100m. tube, and in addition the proportion boiling from 225deg C to 240deg C in comparison with its geraniol percentage as well as the saponification figure of the oil.

It is worth noting that neither the oil nor the portion of it boiling above 225deg C gives Fluckiger's reaction for gurjun oil, which consists in the addition of a drop of a cooled mixture of equal parts of sulphuric and nitric acids to a solution of the oil in twenty times its volume of carbon bisulphide, when a violet colour is produced. This colour is afforded with that usually imported into this country. The author of that test refers to the great number of wood oils which are obtained from various parts of Eastern Asia, and points out that should a wood oil not give this reaction it is probably derived from a differtnt species of Dipterocarpus than those he has examined. This also confirmed by Hirschsohn's observations on the same subject.—*Chemist and Druggist*, March 7.

THE PURCHASES OF THE RECENT TEA BUYERS.

Messrs. Isgaieskeff and Jaegar, representatives of Messrs. Popoff, the well-known firm of tea merchants on the occasion of their recent visit to Colombo purchased somewhere about 60,000 lb, of tea. This has been shipped to Russia by Messrs. Schultze, and will be distributed as pure Ceylon tea, unblended with Chinas. Mr. Schultze has informed a contemporary that the demand for Ceylon tea in Russia is steadily increasing, and other firms besides Popoff Bros. are evineing an interest in the article. It may, therefore, be expected he opines, that in a short time we shall see more Russian buyers here. When in Colombo they purchased a Siroeco from Messrs. Davidson & Co., and it will be sent to Hankow shortly. If found successful, as it probably will be, an order for further machinery, Mr. Schultze believes, will be certain.

THE CEYLON HILLS TEA ESTATES COMPANY, LTD.

This Company has acquired the Agra Oya group which includes Glenalvah situate in Lower Dikoya. It comprises about 450 acres, and has been purchased for £10,000 sterling.

DIMBULLA VALLEY CEYLON TEA COMPANY LIMITED.

Mr. James Sinelair has left for Europe having received special instructions to return to London in connection with the actions it is intended to institute to enforce speeific performance of the contracts to sell. In connection with this matter we also hear that Mr. P. M. Anstruther leaves for England immediately.

DRUG REPORT.

(From the *Chemist and Druggist.)*

42 Cannon Street, E.C., March 5.

ESSENTIAL OILS—Citronella oil is firm on the spot; possibly 1s 11d per lb might buy oil of good quality, standing the usual test, but in several quarters 2s is asked. For shipment the quotation is 1s 10d per lb, c i f February to June. Lemongrass oil is quiet, at 2½d per oz.

SEEDS (various)—Thirty bags wormy Areca nuts sold without reserve at 8s 6d per cwt. The 25 packages fair Madras annatto seeds were bought in at 3d per lb.

VANILLA was in fair supply, but the demand has slackened off, and only a small part sold, but good qualities brought steady prices: fine 7 inch to 8 inch, 25s to 28s; 4 inch to 7½ inch 20s to 26s 6d; fair small chocolate 15s to 18s, and common kinds from 7s 6d down to 6s per lb.

COCOA-BUTTER—Five hundred 2-cwt cases of Cadbury's brand sold at auction this week at from 12⅝d up to 13⅛d per lb, the opening price being lower, with a steady market at the close. At auction in Amsterdam 70 tons of Van Houten's sold at an average of 68·19c per half-kilo, the tone being steady.

COCA-LEAVES of good quality are scarce and inquired for Green Truxillo offer at 1s c i f terms. On our market good qualities are very scarce, and for fine bright Truxillo 1s 1d to 1s 2d per lb would be the price. At auction 10 bales very common dark brown damaged leaves were bought in at 1s per lb.

CUBEBS—Five bags fair small sifted berries from Singapore sold today at 32s 6d per cwt.

COFFEE PLANTING IN THE LANGAT DISTRICT.

Regarding planting in Ulu Langat, Selangor, Mr. Skeat writes in his report:—

The outlook as regards the development of the district by European planters is, on the other hand, most encouraging; and it is greatly to be hoped that the present year will see coffee planting started in earnest on a large scale. Four applications for 320 acres each were received from Messrs. F. B. Hicks, E. B. Skinner, A. A. Allen, and E. J. Allen; and two more applications, also for 320 acres eaeh, from Messrs. G. F. S. and M. Sydney Parry, whilst a previous application from Messrs. Kindersley for 320 acres on the Rekoh Road has been granted. The land embraced by the first six applications is a tract upon the right geographical bank of the Langat River, in the neighbourhood of Merbau Tumbang and Bukit Tempurong. It forms the upper end of

the broad alluvial flats which stretch, roughly speaking, from the Langat River at Rekoh to the Langat Road at Klang, and merge into the coffee reserve in Klang district. When it is once thoroughly drained and roaded, it should include an abundance of excellent coffee land from which selections could be made by intending planters, and it would therefore prove of no small advantage if a continuous coffee reserve, running through the two districts, could be proclaimed by the Government.—*S. F. Press*, March 16th.

PLANTS THAT GIVE LIGHT.

One of the early naturalists, Mme. Merian, I think, describes an extraordinary spectacle which she observed in Asia. Her party was moving through a forest at night, when, without warning, a large light appeared. At first dim, it increased in size, growing larger and larger until finally a tree was outlined in a soft pulsating light. The natives were demoralized, and refused to approach it, saying it was the sacred tree of fire. But the naturalist had little faith in trees of fire and investigated it, finding that the light was due to certain insects, which, by the way, has never been observed since. That a tree or plant could give light was deemed a figure of the imagination, yet today it is known that light-giving plants are not uncommon, and among the most striking and remarkable of natural phenomena. Once in returning from a day's hunt through a deep forest in the heart of the Adirondack region I stumbled against a dead limb of a tree, when, to my amazement, I was at once surrounded by a silvery light that flew in all directions, like darts and arrows of fire, each piece burning where it lay. This was an unusually brilliant display of the best known of luminous plants, the "fox fire," or "witches' glow" of childhood days.

To the layman it is often mysterious, as investigation shows nothing but the decayed wood, and sometimes a soft pulpy mass. The botanist will soon point out the light giver in the mycelium of some fungus that has permeated the old branch and fairly taken possession of it, converting it into a glorious spectacle when disturbed. The vividness of the light may be estimated when it is known that print can often be read by it, and the light of some has been known to penetrate through several thickness of paper. Singular to say, the smallest plant is often the means of producing the greatest luminous effects. This is the diatom, which the naturalist of the Challenger found floating in the ocean in vast numbers, and as the nucleus of the diatom is often brilliantly phosphorescent some of the most remarkable displays of light observed by the naturalists were occasioned by these little plants. But what shall we say to a sight observed by a Norwegian bark in the Bay of Funchal? The waters here are fairly alive with these little luminous plants the year round, and on the occasion referred to a waterspout formed among them. During the day it would have attracted little attention, as the phenomenen is a common one, but the crew of the ship were suddenly confronted at night by a literal pillar of fire or light that extended upward to a distance seemingly of one thousand feet and moved along with a decided bend. It emitted a pale yellow light that stood out in strong relief against the black night, a weird and formidable spectacle, rushing on before the wind.

An English naturalist, wishing to astonish some natives in a wild part of Asia in which he was travelling and impress them with his supernatural powers, secured a certain vine known as Euphorbia phosphorea, and, rubbing it upon a big rock, caused the latter to gleam with flame and present so remarkable a spectacle that the natives ran, believing that he had set the rock afire by simply touching it. The naturalist was aware that the milky juice of this plant, that resembled the dandelion, was brilliantly phosphorescent. In the Harz Mountains there has been for ages a cave known as the haunted cavern. An Englishman, travelling in the vicinity and hearing of it, determined to investigate the mystery. After a long climb he reached the cave. No sooner did complete darkness set in than the phantom of the cave appeared—a remarkable semblance to a human form, with arms outspread, outlined against the gloom. Making his way to the figure that had alarmed so many wayfarers he found that it was a plant that grew upon the wall. It was the well-known phosphorescent fungus, Rhizomospha subterranca, frequently found in caves and familiar to miners. Its light is often so vivid that people have read by it.

These curious lights,are not found in the tropics alone. Some years ago Mr. Morrill, editor of the Gardiner (Me.) Journal, wrote me that he had observed a brilliant steady light in his garden at times, totally unaccounted for by mechanical contrivance, and which upon investigation, proved to be the phosphorescent light emitted by the young of plant Tainus Sydticus. Perhaps the most startling exhibition was observed several years ago by an English traveller in Borneo. Belated, he was overtaken by night, and there being no moon, he was fearful of loosing his way, when as the darkness came on, singular lights appeared here and there in the bushes and by the roadside. Some were yellow; others burned, or seemed to, with a bright greenish hue. As it grew darker, the blaze of light increased, and finally the traveller was amazed to find that he was passing through lines of luminous bush which emitted light so wondrously brilliant that he could read his newspaper by it with perfect ease. The principle light-giving plant, mechanical in its growth rather than botanic, is the electric light plant, thousands of which are scattered through the country. The fruit of the electric light plant are commonly known as electric currents.—*American Grocer*, Feb. 12.

VARIOUS PLANTING NOTES.

A Sylhet Tea Planter.—Mr. A. G. McMeekin, a young American, who has come out to the East to plant tea in Sylhet, has been recently on a visit to the island. His home is at Schenectady, New York, in which city he has been for some time following the calling of an Electrical Engineer, and holding the post of Assistant Production Manager in the General Electric Company (Edison's own Company). Mr. McMeekin's father has, however, been a resident in India for the past 35 years, and his son has now determined to come out and join him. Mr. McMeekin, senior, was one of the pioneers of the Indian tea-planting industry, and now has valuable tea property of his own in Sylhet, whither Mr. McMeekin, junior, proceeded by a Clan steamer.

The Working of the Government Dairy at Poona, says the *Indian Agriculturist*, was not so profitable in 1894-95 as in the previous year, owing to an outbreak of rinderpest which resulted in the death of 34 head of cattle. The disease first broke out in unweaned calves which had necessarily to be separated from their dams. The maternal instinct of Indian cattle being very strong, this separation resulted in a diminished yield of milk to an extent of 36 per cent within a week. This fall represented a daily loss of R18. The significent facts about the disease are that indigenous breeds escaped contagion to a far greater extent than exotic breeds, that young buffalo and cow calves died very quickly, and that cows advanced in pregnancy were hopeless cases. The most effective medicine was carbolic acid given in gruel consisting of linseed boiled with rice, fresh separated milk, and water. The city of Bombay, which set the example to other cities in the matter of introducing improved dairy machinery, has naturally become the great centre of butter-making for India and also for export. About three lakhs of rupees worth of dairy apparatus have been sold, and so far the progress made by the new industry is extremely satisfactory; but the industry is likely to suffer greatly unless those employed in it mend their ways in the matter of cleanliness.

HORREKELLY ESTATE COMPANY LTD.

The annual ordinary general meeting of shareholders of this Company, was held in the registered office (Messrs. Lewis Brown & Co.'s) on March 26, Mr. C. E. H. Symons presided and present were:—Messrs. F. Leisching, Percy Bois, Fred Bois, F. M. Mackwood, S. Green, R. L. M. Brown (Secretary) and other shareholders by proxy.

Notice convening the meeting having been read and minutes of previous meeting confirmed,

The CHAIRMAN submitted

THE ANNUAL REPORT

which was held as read. It is in the following terms:—

1. The Directors have pleasure in submitting the accounts of the Company for the past year showing (with R1,472·84 brought forward from 1894 and after writing off R3,331·21 for depreciation of Plant and Machinery at the usual rate) a net sum of R30,051·66 at credit of Profit and Loss account available for distribution.

2. The Directors recommend that a dividend at the rate of 7 per cent be declared on the capital of the Company (which has been all called up and received). This will absorb R28,000 and leave surplus of R2,051·66 to be carried forward to 1896.

3. The crop of coconuts in 1895 was a very good one and realized full rates, the yield being due to the favorable rainfall and to the steady application of manure.

4. During the year Mr. Thos. Carey left the service of the Company as Superintendent and Mr. A. W. Beven has been appointed his successor. It is expected that with the regular application of manure now being made, the crop for 1896 will be a very favorable one if normal rainfall is experienced.

5. The working of the seasons 1893, 1894 and 1895 compares as follows (the item of interest being excluded:—

	1893.	1894.	1895.
	R. c.	R. c.	R. c.
Expenditure on the Estate and in Colombo Office ...	31,385 55	33,243 74	32,747 69
	Candies.	Candies.	Candies.
Quantity of Copperah produced ..	958	773	1,036
	Ballots.	Ballots.	Ballots.
Quantity of Coir Fibre made ..	39,869	40,245	25,703
	R. c.	R. c.	R. c.
Average price obtained for Copperah, per candy	47 43	48 06	49 70
Average price obtained for Coir Fibre per cwt.	3 80	4 25	4 67

6. Two Directors—Messrs. C. E. H. Symons and F. C. Loos—retire, and are eligible for re-election.

7. The Shareholders have to appoint an Auditor for 1896.

By order of the Board of Directors,
LEWIS BROWN & Co., Secretaries.

Colombo, 16th March, 1896.

The CHAIRMAN, in moving the adoption of the report, said the Directors had a better state of matters to report, to the shareholders than had been the case for some years past. It would be seen from the report that the Directors recommended a dividend of 7 per cent. per annum after having written off the Ordinary depreciation. The prospects of the coming crop were considerably better than those of the past year and he thought there was every chance of their being realised. They had experienced good rains during the past year and they were having good rains up to the present time. The sale of the produce for the coming year promised to be quite as good if not better than the past. The price of copra had gone down, but the price of coconuts had gone up, very much, owing to the desiccated interests. Of the first crop of the present year 300,000 coconuts had been sold on the estate at R40. That, he thought, must be regarded as very satisfactory in view of the price of copra at the present time. Of the second crop the same price had been offered for the same number, but it had not been accepted yet. That was a matter for the Directors to settle bye and bye. On the whole, he thought, they might congratulate themselves and look forward to a very prosperous year. They had lost Mr. Carey, but now they had got Mr. A. W. Beven in his place. A considerable amount of trouble had been experienced owing to the coolie question. All the experienced coolies had left the estate and they were employed not very far from it. No doubt they had been enticed away. It had left Mr. Beven in a very unpleasant predicament, but he was doing his very best to find coolies and that he would be able to do, that he (the Chairman) had very little doubt. He concluded by moving the adoption of the report.

Mr. MACKWOOD inquired how it was that with a larger output of copra, which involved a large number of coconuts, they were selling less fibre.

In explanation, the Chairman stated that they had as much fibre as formerly but, owing to the scarcity of labour, only that part which really paid was prepared for the market.

The report was adopted.

Mr. MACWOOD proposed and Mr. Green seconded that a dividend of 7 per cent. be declared payable on 1st April.

Agreed.

On the motion Mr. Green seconded by Mr. Fred Bois the retiring Directors Messrs. Symons and F. C. Loos were re-elected Mr. Hercules J. Scott was appointed Auditor.

This was all the business.

A NEW COMPANY.

THE KALUTARA COMPANY, LIMITED.

The memorandum and articles of Association of the Kalutara Company, Limited, is contained in a recent *Gazette*. Among the objects for which the Company is established are—to purchase, or lease, or otherwise acquire any estate or estates, land or lands, or any undivided share or shares in any such, any machinery, implements, tools, live and dead stock, stores, effects, and other property, real or personal, movable or immovable, of any kind whatsoever in the Island of Ceylon. To purchase tea leaf and (or) other raw products for manufacture, manipulation, and (or) sale. To manufacture tea leaf and (or) other products. To carry on the business of planters of tea and other products in all its branches. The liability of the shareholders is limited. The nominal capital of the Company is R750,000, divided into 1500 shares of R500 each, of which 500 shares may be issued with any guarantee or right of preference as may be determined or provided by the Articles of Association of the Company. A share each has been purchased by:—Messrs. C. E. H. Symons, T. J. Anderson, G. H. Alston, C. J. Donald, Jas. A. Henderson, A. J. Sawer, and G. W. Carlyon.

INDIAN AND CEYLON TEA COMPANIES' PREFERENCES.

An investment which will bring in from 4 to 4½ per cent., and at the same time afford a very fair degree of safety, with a good prospect of appreciation in capital value, is now-a-days becoming so rare that we make no apology to our readers for reverting to a class of security to which we have more than once called attention. We refer to the shares of Indian Tea Companies, and especially to the Preference shares, which partake more of the nature of an investment stock—speculative, it is true, as every stock of the kind must be, but by no means more so than the shares of first-class home industrial securities. During the past year both the

Preference and Ordinary shares of Indian Tea Companies have had a considerable rise. The market has become more free and active, and the enlarged dealings are the result of greater public attention being attracted to this class of security. The widening of the market is still going on, and it is highly probable that a further appreciation of prices will take place during the next few months. Purchasers, therefore, need be under little apprehension that they are buying on the top of the market. On the contrary, we are of opinion that the present is about as favourable an opportunity for "getting in" as they are likely to see for some time to come. Compared with the advance that has occurred in many home securities of equal character and standing, the improvement in Tea shares has been only moderate, and they may still be regarded as fairly cheap. As we have said, the Preference shares in even the best companies will return at present quotations a yield of from four to four and a-half per cent., while the Ordinary shares can yet be bought at figures yielding from six to seven per cent., with a very fair chance of a continuance of that rate of interest.

It is, however, with the Preference shares that we are concerned just now, and for the convenience of investors we subjoin a table showing present quotations and yield of the soundest and best-known of these securities :—

Interest per cent.	Name of Company.	Value of Share. £	Present quotation. £	Yield per cent.
7	Dooars	10	17½	4
6	Jokai	10	15	4
5	British Indian ..	5	5½	4½
6	Lungla	10	13½	4½
6	E. India and Ceylon	10	13	4¾
6	Cachar and Dooars..	10	13	4¾
6½	Singlo	10	14	4¾
7	Chargola	20s	28s	5

All of these shares, with the exception of those of the Singlo Company, are cumulative; and have a preferential claim not only as regards interest, but also as to capital in the event of a distribution of assets. A point to bear in mind is that in the majority of cases not more than one-third to one-half the total capital takes the form of Preference stock; and in many instances, notably in that of the Jokai, the future issue of such stock is limited to a small proportion by the Articles of Association. It may be taken, therefore, that as a general rule the value per acre as represented by the Preference shares is very moderate—a fact which naturally adds to the worth of the security. A point which holders of Preference shares always have to take into consideration is the possibility of a further issue of Debentures being placed ahead of them. In this respect there need be little present apprehension as regards the companies mentioned, or indeed as regards Tea companies generally. There exists a strong feeling against this method of raising money as tending to weaken the status of the share capital, and few if any, of the companies have urgent necessity to increase their funds. In reference to the possibility of a further appreciation in value, the fact, that the total amount of available Preference stock is comparatively small is worth bearing in mind. No doubt as the market continues to open up, several of the companies that have not already done so, will be inclined to split their shares into Preference and Ordinary, and this tendency is already observable to some extent. Fresh shares will also be issued for the purpose of acquiring new estates, but there is not the slightest fear of the market being flooded with securities of this class. Another question of the first importance to investors is that of the reserve fund. No industrial company, however sound, is free from the vicissitudes inseparable from trade; and in addition to fluctuations of this kind, planting companies are also liable to the risks of a bad season and short or poor crops. It is therefore re-assuring to find that the majority of the Tea companies possess an adequate reserve fund in some form or other, either in the shape of undivided profits, or else in extensions of ground purchased out of surplus earnings. This last is, of course, a form of reserve which is open to some objection, since it is not liquid, but it is at any rate a more tangible asset than when money is sunk in a purely manufacturing business, and the security behind the Preference shares is proportionately increased. In the case of the companies mentioned in our list there is, besides, a substantial reserve in actual cash, a circumstance which will no doubt tend to increase the confidence of investors.

It must not be supposed that the list given above by any means exhausts the catalogue of shares that can be safely recommended for a purchase. In the table of shares which we publish weekly there are a number of others whence a selection might be made. There are also the Ceylon tea companies' shares, which are at present neither so well known nor so freely dealt in as those of the Indian undertakings, but nevertheless present an attractive and improving form of investment. The only disadvantage about purchasing the lesser-known shares is that the acquirement or disposal of them might necessitate a little more negotiation than in the case of those we have quoted. Doubtless the yield might as a rule be a little better, and the one advantage must be set against the other. However, the return even upon the shares mentioned, which may be looked upon as the pick of the basket, is sufficiently alluring in these days of cheap money and meagre yields. If a thousand pounds were spread over the eight companies in our list, the investor would obtain an overhead return of 4½ per cent, together with a considerable prospect of an improvement in capital value. The risk of depreciation upon an investment so distributed would be very slight, and might almost be disregarded, provided no great calamity, such as a war, affected the industry; for in normal times the market is absolutely certain, and is steadily expanding, thereby correcting the increase in production. The exhaustion of the gardens, moreover, is a contingency so remote that it may be eliminated at present from consideration. One word of caution is necessary to those who are thinking of investing in Tea companies' Preference shares. The market, though much freer than it used to be, is still to some extent a limited one, and if a purchaser insists upon buying a particular share he may be obliged by the conditions prevailing at the moment to give a higher price for it than would be necessary if he waited for a more favourable opportunity. It is therefore advisable to give a limit, and also a little discretion, as to time. But it is better still to allow the broker a range over one or two shares. In the list above, there is really not very much reason why one share should be preferred to another, and the soundest manner of operation is to spread the amount available over two or three different securities. As regards the general position of the companies, both with reference to the tea produce market and the increasing popularity of the shares, our anticipations of a few weeks back have been more than fulfilled. —*Financial Times.*

MR. E. E. GREEN ON A CEYLON INSECT.—At a meeting of the Entomological Society on February 5th, Mr. E. E. Green remarked that in the *Trans. Ent. Soc.*, 1881, p. 601, was a short paper by the late Professor J. O. Westwood, decribing a curious little insect from Ceylon under the name of *Dyscritina longisetosa*. Professor Westwood believed his typical specimens to be immature. Mr. Green exhibited what he supposed to be a later stage of the same species. He said his example differed in some particulars from Westwood's description and figure—notably in the proportions of the caudal appendages. The present specimen was taken in the Pundaluoya district of Ceylon, at an elevation of about 4,000 feet. Mr Green said he had more than once seen this insect under loose pieces of bark and in crevices of rocks, and had always been struck by its likeness to an earwig both in appearance and habits.—Dr. Sharp, Messrs McLachlan, Gahan, Blandford and Hampson made some remarks on the subject.—*Athenæum,* Feb. 15.

WITH DR. D. MORRIS, C.M.G.

What is to be done with our West Indian Colonies is a question that, I have reason to believe, is occupying Mr. Chamberlain's attention just now. Not from the political, but from the economic or industrial standpoint is the Colonial Secretary's mind occupied with them. Among the gentlemen whose knowledge and experience of our Colonies and their natural products has led to their being consulted is Dr. D. Morris, C.M.G., Assistant Director of the Royal Botanic Gardens at Kew, who has made a special study of what I may term commercial botany. I am afraid this is not a generally recognized branch of the science; but I mean to convey the impression, a perfectly correct one, that Dr. Morris has given an eye to the commercial possibilities of vegetable products. His first official appointment was to the Assistant Directorship of the Botanic Garden in Ceylon, where he made investigations into the fatal coffee leaf disease Then he was transferred to Jamaica, and spent seven years in the West Indies, while he has been to St. Helena and other places, so that he is something of a traveller, even in these days when never to have left London is becoming quite an enviable distinction.

Last year Dr. Morris spent his winter vacation in the Bahamas, where, though his visit was purely unofficial and of a holiday nature, it was felt that it was not the sort of circumstance that could be allowed to pass without benefiting somewhat the inhabitants. Dr. Morris cheerfully placed his stores of knowledge and experience at the disposal of the Governor and gave a series of lectures on the best means of making the most of the various resources of the islands that were immensely and deservedly appreciated. He has not long returned to his post, and it follows as the day the night, that I was not long in tracking him to his lair. This, I may explain, is a political mode of reference to a very comfortable study in Kew, where I was cordially welcomed. Dr. Morris has had so much practice in handling thorns and prickly plants that the ubiquitous interviewer has no terrors for him.

"I am afraid you will know almost as much about the Bahamas as I shall be able to tell you," said Dr. Morris, laughing, when I had explained to him the dire object of my visit.

"Well, now," I whispered, confidentially, "I really think professional etiquette demands that I should answer that observation in the affimative. But as we are here alone, I don't mind confessing that I am not omniscient and that pretty well everything you can tell me will be news."

"Is that so?" quizzically interrogated Dr. Morris. "Perhaps, then, I shall not be far wrong in starting by telling you that the Bahamas consist of a chain of islands some twenty of which are inhabited, comprising in all about 5,794 square miles, and forming the largest West Indian colony, with the exception of Jamaica. They lie in the Atlantic Ocean off the South-East of the United States. The principal islands are New Providence in which the capital Nassau is situated, San Salvador, Abaco, Grand Bahama, Long Island, etc.

"And what about population?"

"Over 48,000 in 1891, showing an increase of 6,000 as compared with 1881. The whites are one in seven or eight of the total population, thus constituting a much greater proportion than in Jamaica, where they are only one in twenty-three. The whites are descendants of old Royalist families, and are a very fine, pleasant people. Many are of Scotch and Irish descent, and it is curious that the latter still retain the brogue though they have been isolated for ages. It struck me as decidedly curious and interesting that this should have persisted. They are a hard-working, steady people, and intensely loyal. Although, owing to geographical reasons, their trade is chiefly with the United States, their attachment to Great Britain is very great, and they are intensely grateful for any sign that the mother country is interested in their welfare, and very thankful for a helping hand. They do not want money; but some trouble to consider their special requirements, and advice to help them to prosperity; and I am very pleased that there is every prospect of Mr. Chamberlain not forgetting them, spite of the great calls more pressing matters are making upon him."

"There is a feeling of interest in the Colonies, little as well as big, growing up everywhere in Great Britain now, I am glad to say, so that your observations do not surprise me. What sort of climate have the Bahamas?"

"Very pleasant and salubrious indeed in the winter season, when they are much frequented by visitors from the States, especially those in search of health. There is an excellent hotel owned by the Government, which is open during the season. In the summer of course it is much hotter. The rainfall is about 40 inches."

"Would the Bahamas be suitable as a winter resort for such persons as now go to Madeira?"

"Undoubtedly they would, and I should say would have some advantages over Madeira in that the climate is more bracing. But as regards European visitors, the distance and the difficulty of communication have to be considered. You see you have to go to New York first, and then from New York to the Bahamas."

"Is there no direct communication with Great Britain?"

"Not now," answered Dr. Morris. "There used to be a monthly steamer, but it didn't pay, and now there is none at all."

"And next, Dr. Morris, I shall be glad if you can give me some information as to the trade of the Bahamas?"

"With pleasure, my dear Hermes. I remember enough of my classics to know that your mind was always directed to business, and I see that your survival into the fag end of the nineteenth century has not made any change in you. As I have already mentioned, the islands trade almost entirely with the United States. A glance at the map and a thought as to what I have just said about communication will sufficiently explain why. For the year 1894, the latest of which the returns are available, the imports amounted to £175,000, and the exports to £120,000, a total trade of £295,000. Of this total about 25 per cent. was done with the United Kingdom. The imports, I may say here, consist chiefly of foodstuffs, hardware, cotton and other fabrics, and wines and spirits."

"Sponges, pine-apples, hemp, turtle shell, logwood and other timber, and fruit of various descriptions. I should like to tell you something in detail about these items if you will permit me."

What need to mention that my permission was freely and unreservedly granted. Dr. Morris asked me too pleasantly to be refused. Besides, though this is secondary, had I not visited him specially to hear what he had to say?

"Well, the chief industry from the money point of view is the sponge fishery, the annual output, if that manufacturing term may be employed, being £60,000. A large fleet is employed in this industry. There is also a native-built fleet of over 100 boats employed in other forms of fishing, amongst which I may mention pink pearls, and there are 500 men employed in this way. Do I think these industries capable of much more development? No, I do not think they are. I fancy that as much capital and energy are devoted to them as they will stand. It is in the development of small industries, in putting labour into the land that the salvation of the West Indian Colonies is to be found and it was by indicating the way in which this may be most advantageously done that I may claim to have been of some little service during my trip. Living, as the inhabitants of the Bahamas do, out of the main track of travel, they want some outside help as to what they can produce that other people are ready and willing to buy from them. I don't like to appear egotistical, but in Jamaica the development of the fruit industry was a matter in which I took much interest, and, as results are showing, not unsuccessfully."

"I am aware that Jamaica may be said to have saved itself by fruit, and there is no immodesty in your claiming a share in a good work," I replied

warmly. As a rule, too little is known of the quiet, unobstrusive, but valuable help afforded by scientific men in connectiou with commercial matters.

"Well, to return to the Bahamas, not literally," for I had made a jump from my chair and was looking round for my hat, which I ultimately found I had utilised as a seat cushion, "but in our conversation. After sponge comes pineapple. Large quantities of this fruit are sold to the United States, the value for the year 1894 being not less than £50,000. At the same time, I am of opinion that with more care and attention in the cultivation and manuring of the pine-apple, it would be possible to increase this item of production considerably. Oranges are also grown, and I daresay the destruction of the Florida orchards by frost will lead to an increased cultivation of oranges all over the West Indies. Then there is the grape fruit."

"Which, I suppose, is not the grape?"

"You suppose rightly. The grape fruit is something like a large yellow orange but with a slightly bitter flavour, due to a tonic principle which is highly valued in the States, where the fruit is largely taken as a digestive. In greater attention to oranges and grape fruit, and in arranging to supply the States with early fruit and vegetab'es for which they are specially adapted, I think the Bahamas have a prosperous future before them; aud though a small and comparatively insignificant portion of the British Empire, their well-doing caunot but be a source of gratification to us all."

"I take it, theu, that you think there are great possibilities in early fruits and vegetables, Dr. Morris?" I asked.

"Undoubtedly. Look at the Bermudas, that turn out spring onions to the tune of £60,000 a year, new potatoes to the tune of £27,000 a year, and lilies to the tune of £21,000."

"Are lilies early fruit or vegetables?"

"You are too particular," smilingly answered Dr. Morris. "But to resume. Look also at the fruit trade of the Canary Islands, the Azores, and the Channel Islands, worth in the aggregate several millions sterling per annum St Helena, again, is now getting more prosperous, because it has devoted itself to supplying the Cape with new potatoes. It is in these minor industries, as they have been styled, that no inconsiderable portion of the wealth of planting countries is found, and more will be found in the future. But they want cultivating with intelligence and enterprise, otherwise by growing unsuitable products or not growing suitable products properly. or not preparing them for market in the best way, loss instead of gain will naturally result. But the inhabitants are waking up to the conditions of the times, and I do not think they will be found lacking in the qualities that deserve success, and go so far, also, towards commauding it."

"And what about sisal? I understand that it promises to be a great source of wealth to the island."

"At present there are 20,000 acres under cultivation. The plant existed in the island for more than 50 years, but had run to weed. Successive governors tried to utilise it, Mr. Bayley, Sir William Robinson, and Sir Henry Blake. In 1888, Sir Ambrose Shea, who had succeeded Sir Henry Blake, took up the matter. There has been some controversy on this point, but while there is no doubt that he was not the first to note its value, it is largely due to his personal effort and spirit of enterprise that the industry has been so far established. It was he who first engaged the attention of capitalists in the industry, and so impressed them with the capabilities of the plant that they were willing to embark their money in its cultivation. The industry has been somewhat hampered too."

"Indeed! In what way?"

"When the industry was started in the Bahamas the price of fibre was exceptionally high. This led to exaggerated ideas being entertained as to the profits likely to be realised, and no doubt much land that was unsuitable for the purpose was planted with sisal. Then, too, the enterprise was overloaded with capital, which was due to the same cause, and consequently the cost per acre was increased so as to make a reasonable return unprofitable. A similar mistake was made when the fibre industry was started in the Mauritius. Of course, when the price fell, many of the companies could not pay. You see all white-rope fibres, of which sisal is one, are liable to violent fluctuations. Take sisal itself. In 1889 it was £56 10s per ton. In 1895, it fell to £13. This, it is true, was a quite exceptional fall, and due largely to over-production consequent upou high prices and to the depression of trade in the United States."

"Then you do not take a hopeful view of the future of the sisal industry, Dr. Morris?"—I enquired with considerable curiosity.

"Well, I should hardly be justified in desponding about the future of sisal. If white-rope fibres pay anywhere they should pay in the Bahamas. The plant is the best of its kind, and it yields excellent fibre. I am informed on good authority that the latter can be placed in the New York market at a cost (including cutting and carting the leaves, cleaning, baling the fibre, and shipping it) of something like one penny (two cents) per pound. Now, manila costs two pence (four cents) per pound at Manila and Yucatan. hemp costs a penny halfpenny (three cents) per pound at Progreso. These are the official figures quoted in my Canton Lectures before the Society of Arts. Bahama sisal should therefore hold its own. The people are, I believe, determined to keep down expenses, and to ship only first-class fibre, so as to establish a name for it."

"And what about cleaning the fibre? Has the machine difficulty, about which we have heard a good deal, been satisfactorily solved?"

"That I regard as one of the most satisfactory points about the Bahama industry. They have better machines than are used in Yucatan—all doing good work. For instance, I saw the Todd machine working both at Andros and New Providence. This turns out about three-quarters of a ton of fibre per day. The total cost of an engine of 24 horse-power, driven by kerosene gas, of a Todd fibre machine, complete, and of a double-screw press is about £1,000. If a second machine were added, making the total cost about £1,600, the same engine would drive them both. The output of fibre would then be about a ton and a half per day, at a slightly reduced cost. The position of sisal on good lands is, therefore, not so bad. In fact, the people who know most about it say that sisal in the Bahamas has come to stay. At the same time it must be said that sisal is not a small man's cultivation—on the contrary, it requires considerable capital and organisation."

And then I discovered that I should miss my train if I lingered longer talking over sisal, so I bade Dr. Morris a cordial but hasty farewell, and within a very few minutes a railway porter had discovered that he was unequal to the task of keeping out of a train in motion the winged Hermes.

—*Commerce.*

THE TIBETAN TEA TRADE.

Much is said about the expansion of the tea trade of British India and the possibility of extending it to Tibet. It appears there are powerful obstacles, the chief being that the sale of tea in Tibet is a Chinese Government monopoly, which the wily Celestials are most indisposed to relax their grip of. Most of the tea consumed is grown in Western Szchuen, and though the three qualities produced there are all very poor, the worst of the three is the only quality used, and 65 per cent of that consists of twigs and brushwood! This singularly attractive blend appears to have been introduced to the notice of the Tibetans in 1074 A.D. (a long time before England tasted tea), at which period it used to be bartered for horses. From the first the traffic was under Government control, and the system of "permits" now in vogue was introduced in 1127. These permits are issued by the Board of Revenue in Pekin each season, and must be returned thither by the end of the year, with the revenue arising from the amount of trade repre-

sented by them, each permit covering five packages of tea. The so-called tea is chopped fine, steamed in tubs, partially dried, mixed with rice water and packed tightly in cylinders of bamboo matting at about two-thirds of a penny a pound, on which the profit is 75 per cent.! Mr. de Rosthorn, who tells us all this, is confident that Indian tea could not compete with this rubbish in point of cheapness—but the question is. If Tibetans were once to be, come acquainted with the superior Indian article, would they not prefer it? The Chinese could easily be pacified by the proceeds of an import duty.—*Sunday Times*, March 1st.

BRITAIN IN AFRICA.

Last night (Tuesday March 3rd) Mr. G. Scott Elliott read a paper before the Society of Arts on "English East Africa and British Central Africa," Sir J. Crichton Browne occupying the chair. The speaker said the various districts of Africa were essentially distinct—a fact which had to be borne in mind. Elevation was a great factor in this connection. The Zambesi and Shire valleys, as well as much of the plain round Nyassa, were below the altitude of 3,000 ft. Here woods were valuable native products, such as the rubber-vine, kula wood (a new dye), and the oil palm. The cocoanut palm was also a promising product. Some plantations, such as sugar, could be carried on in spite of the climate, and cotton was also produced. Other "sure" articles of commerce were sesame rice, the ground nut, and castor oil. Of unproven plants were the cocoa-tree, which had been a great success in the German Cameroons, while caoutchoucs had also beed suggested, but these plants take long to mature. Vanilla has so far been profitable in German East Africa. In English East Africa the natural products were similar. Gum copal and orchilla may be also expected. Ostrich feathers might also be exported, and a few ostrich farms might be made in the district. The clove tree was suitable to the district. The lower districts of English East Africa were, however, not very promising, and only the coconut palm and cloves could be safely recommended by the author.

In British Central Africa, at the levels between 500 ft. and 3,000 ft., there was a thriving and flourishing community. The coffee from here obtained the highest price in the London market, and suitable coffee ground existed for the supply of the whole of the civilised world. Tobacco, quinine, tumeric, ginger, and hemp grew in a satisfactory manner. Indigo was the most promising plant yet untried, but new fibre plants were to be avoided. The ivory trade in Uganda would become quite insignificant in another five years, while there was no proof of gold or other valuable minerals, and the iron could hardly bear to be exported. Coffee was found in a half wild condition, growing near the Victoria and up some of the valleys. Wheat and rice had been successfully grown by Europeans. Cotton was indigenous, and should be quite satisfactory. The unfortunate point about the country was its distance from the coast, and the author considered that a railway of 657 miles in length implied a cost of £323 to run a train from Nyanza to the coast. Hence the cost of transport would have a bad effect on agricultural development. This prohibitive cost could be deminished, perhaps by one-half, through water transport, either by the Kagera and Tanganyika or by the Nile; but that was a question of the future.

Above 5,000 ft. was, according to Sir John Kirk, the only part of tropical Africa where Europeans could permanently reside, but the area in British Central Africa fit for colonisation had not yet been tested.

Suggestions were made by Mr. Elliott as to the future. The first essential was the maintenance of our national policy of non-interference with planters and settlers; the next to avoid monopolies or concessions, whatever the name under which they were disguised; that the administrator should not be made a mere telegraph clerk; and that for subordinates in adminstration properly-trained men should be appointed. A railway was most urgently required in British Central Africa.

For our own country, at present it seemed to the author that there were three requisites of paramount importance. First, an outlet for our congested capital and overflowing population; secondly, new markets; and thirdly, that all our imports of food and raw material should be derived from countries directly under our own. All these requisites were fulfilled by parts of our African possessions.—*Financial Post*, March 4.

RETROSPECT OF THE PAST TEA SEASON.

The final tea auction has been held, and the season 1895-96, as far as Calcutta is concerned, is virtually closed. A retrospect, says *Capital*, is not pleasant contemplation; there can be only one verdict, it has been a failure. Poor outturn, poor quality, and still poorer prices, the previous season was so exactly the reverse in every direction that the industry, as represented by present quotations for tea stock, has received a heavy blow. The drop has been too accentuated. Although a season such as that of 1894 is not likely to recur for some time, yet 1895 must for the same reason not be taken as representing the future of the industry. It is to the weather we must ascribe both the previous good fortune and the present misfortune. 1895 was unusually capricious as regards rainfall, and even in those districts that can point to a full supply it was so fitful that they were not able to reap the benefit. Continuous periods of drought followed by abnormal downfalls spell failure both to outturn and quality, and when, as in Assam, the crop is mainly gathered after the rains have fairly set in, an early cessation, as in 1895, means all but disaster. There can be but one opinion—the quality has been poor, or, to use the words of the brokers, common, an average of two to three annas worse than that of the previous year has been general, proving conclusively that the same climatic influence has pervaded all tea districts, and it is hard upon the interest that for one bad year tea stock should depreciate to the extent of fifty per cent. Notwithstanding the outcry as to the heavy extensions of late years the increase in the crop for the past three years has barely exceeded six per cent per annum, which is surely not excessive. considering the amount of the crop, and compares favourably with the increase from Celyon, which has been a far more potent factor in depreciating prices. India does not seem to be awake to the efforts that Ceylon is making at home and elsewhere to push its teas. In Mincing Lane itself India more than holds its own, but it is when the tea reaches the trade that Ceylon is to the front; every planter that goes home from Ceylon seems to consider it a pride as a duty to push the produce of the Island. It also possesses an advantage. All tea from the Island is known as Ceylon, there is no diversity when asking for the tea. This is not so with India. The trade is confused with Darjeeling, Assam, Dooars, etc. There has been the usual shuffling of the cards with managers; it is becoming painfully evident that the sins of climate, agency, etc. are being visited too frequently on the managers, and these constant changes are detrimental in the extreme to all interested. It must be a source of more anxiety to the managers than to any one with a bad season in the past over which he has no control; it robs him of any commission

and threatens even his very bread and butter, and far too often bad advice and misdirection from the agents have brought about his dismissal. The question as to quantity or quality is continually cropping up; it resolves itself finally into a question of market. In a year like the past, providing it was possible, quality would have paid.

In 1894 either the quality was superior or made so, but would any planter allow that there was any alteration or endeavour on his part to produce a poorer quality of tea in 1895 than in 1894, and to lay the blame to planters is to come to the conclusion that old and experienced men went out of their way to produce inferior tea. No; there is but one verdict. 1895 was a bad year entirely through climatic causes. It is painfully evident from the various reports to hand that Assam is being severely taxed as regards labour. It has reached a critical state; the cost of labour in some cases has reached R140 per adult in the railway is opened throughout, free labour may be attracted as in the Dooars, and there can be no doubt Assam can per head afford to pay more for its labour or wages even than the Dooars, and it only requires to be directed that way by the incentive of higher wages and easy mode of transit to seek work there. Let us hope this will be the case. At the present the position is very serious, the journey by the steamer is fraught with danger; cholera has been rampant on the voyage, and it is melancholy to calculate the loss of life and money that has resulted during the last six weeks It may seem ungrateful to exercise the efforts of Mr. Blechynden in America, but there is a want of business tone in his letters too much playing to the gallery and we doubt if the American taste, for the garden. When the beverage is to be reached through the aid of ladies' conferences.

The prospects for 1896 as reported so far from most districts is unfavourable. The drought that has pervaded India for months has had a prejudicial effect on tea, and Cachar alone has had a rainfall of any service, but it is early yet to foretell the result. The increased rate of consumption at home, that in the past month of February represents 1,700,000 lbs., is so hopeful that it bears out our contention that the extensions are not to be feared, and that prices are likely to harden, so that 1896 may yet gladden the pockets of investors Might we suggest to the Indian Tea Association whilst laudably anxious to give the increased area under plant, that it would be of interest to all connected if they obtained some statistics.

A factor for the coming year that must be reckoned with is the rise in exchange. It mainly affects those districts that go for producing quantity, and pride themselves on ten maunds per acre. Any further serious rise in exchange means the difference to them of the slight margin that now exists between cost of production and price realised, otherwise profit or less. This rise must not be regarded as a bad omen for the industry; on the country, the continued depression in exchange has in a measure to answer for the increased bulk of the poor and common stuff that went forward in 1895, and if this rise forces more careful plucking we may look for an improvement in the lower class of tea. The area under plant that has been abandoned during the past ten years must be very considerable. In conclusion we deprecate too much stress being laid on producing finer quality; so much depends on the weather that every manager should be left to himself; it is to his interest to get good prices, and to dictate to him from Calcutta or London how to pluck is to remove responsibility from the proper quarter and too often results in failure.—*Indian Planters' Gazette*, March 14

THE TEA MARKET.

At the low level of prices is void of activity. Ceylon growth at the moment shows best value and interferes with China business. Indian, with the season's supply nearly all to market, tends to former rates. Deliveries go on at a favourable pace, thus relieving the accumulation of the bonded stock. —*L. and C. Express*, March 13.

MARKET FOR TEA SHARES.

Thursday evening, March 12.

Tea shares continue to attract more and more attention among investors, and there has this week again been wholesale buying of shares in all the better-known companies, and "record" prices have in many cases been paid.

Mincing Lane.—Easier for all Ceylons, but steady to firm for the reduced supply of Indians.

Fresh Issues.—Dimbula Valley Ordinary are inquired for, but without business. The Preft. have been taken freely at £6.

Ceylon Shares.—C. T. P. Co. Ord. have been taken as high as 26½, and the Prefs. are wanted at 17 upwards.—*H. & C. Mail.*

PLANTING AND PRODUCE.

Produce and the Board of Trade Returns.—The condition of trade as indicated by the Board of Trade returns is good. For the month of February imports have increased by 26 per cent over February, 1895, and exports by 23·2 per cent. Even when we take into account the fact that from 3 to 4 per cent of this increase is due to the extra day of a leap year February, or the still further fact that the totals for the same month last year were depressed by 17 per cent in the imports and nearly 10 per cent in the exports, owing to the extraordinary prolonged frost, this year's returns are the best by from 6 to 10 per cent seen for a long time. All classes of merchandise share in the improvement; but in imports, articles of food and drink (duty free) and manufactured articles more than half fill up the total increase. As regards produce, sugar, both raw and refined, is more both in quantity and value, and there is also a considerable rise in its price, owing partly to the Cuban insurrection having continued so long. Tea and cocoa have been landed in much larger quantities, but coffee is much below last year's level.

A New Indian Tea Company.—We have received the prospectus of the Rema Tea Company of Sylhet, Limited. The capital of the company is £50,000, in 5,000 shares of £10 each. The prospectus states that the company is formed to acquire as from January 1, 1896, from the Rema Tea Syndicate, the Rema Tea Estate in South Sylhet, in the Province of Assam, India. The estate consists of a grant of land comprising 1,911 acres, or thereabouts, of which the Government have agreed to grant to the nominee of the syndicate a renewable lease, and which has been opened out and planted with tea during the year 1895 to the extent of fully 600 acres. There are about 400 acres more of suitable tea land upon the grant which it has been arranged to plant out in 1896, and which will give the company by the end of the year an area of 1,000 acres under tea. The planting out so far has been inspected by Mr. H. Sanderson of Chundeecherra Estate, Sylhet, who reports that it is practically full, The land is held direct from Government and is at present rent free, but subject later on to a rent of about R1·8 per acre.

The Duty on Coffee.—With reference to the recent deputation to the Chancellor of the Exchequer on the coffee duty the *Grocer* says: "There is hardly a dutiable commodity in the Customs tariff that requires more help and relief from the burden of taxation than coffee, and yet the Chancellor of the Exchequer makes light of it by telling his hearers that 'if coffee and chicory were to pay no duty cocoa also should be relieved from duty, and he (the Chancellor of the Exchequer) thought it was probable that if the matter went on further he would hear something from the consumers of tea and those interested in the trade.' This is clearly an unfair way of viewing the question, as there is no parallel between coffee and cocoa, for the reason that the latter flourishes astonishingly well under the duty it bears, and therefore does not need the same measure of legislative assistance; and as to tea, why, the answer to repealing the duty on that is quite as good as any of those that were rendered in

favour of abolishing the duties on sugar, which event took place in 1874. Still, in upholding the views of those persons who are strong advocates for a "free breakfast-table,' we, for our part, should be glad to see the impost on tea, coffee, cocoa, chicory, and dried fruits all swept away at a stroke and especially those on the minor articles, which yield only a paltry addition to the revenue of the country. One of the speakers at the meeting put the whole case in a nutshell when he said that 'on the face of the memorial there are two things—one is the smallness of the sacrifice asked for, and the other the benefit it would bring to a very large and important trade.' In fact, the duty on coffee amounts to only about £170,000 per annum, whereas that on tea reaches no less than £3,696,000 in a single year, so that there is virtually no excuse, on any grounds that can be urged, for not repealing the impost on the former because it would, as the Chancellor of the Exchequer puts it, be unjust not to abolish the duty on the latter claimant for exemption. Coffee, as a harmless yet refreshing kind of beverage, is more beset with difficulties in its path to consumers than any other drink, and when these are duly pressed upon the attention of the Legislature it is for them to seek to remove them as quickly as possible. A great bar to the consumption of coffee in the United Kingdom is the absence of liberal supplies of a desirable character: and the main cause of its consumption not progressing at an advanced rate, since the duty was halved in 1873, has been the serious and alarming falling off in the imports from Ceylon, which, in consequence of the failure of the crop through the setting in of the leaf disease there, about the same year, have since dwindled almost to nothing. Substitutes, it is true, such as Costa Rica and other Central American descriptions, have been found for plantation Ceylon, but these have proved totally inadequate to make up for the deficiency in the receipts from Ceylon, and no fresh sources of supply have been opened up that would serve as a beneficial stimulus to the home trade.—*H. & C. Mail*, March 13.

IN THE COURTS.

MR. GORDON CUMMING AND THE DOOARS COMPANY, LIMITED.

In the High Court of Justice, Queen's Bench Division, before the Lord Chief Justice and a special jury, last Friday, (March 6) the case of H. W. Gordon Cumming v. the Dooars Tea Company, Limited, came up for hearing. The case is of much interest to the tea industry and planting community generally. The plaintiff claimed compensation for alleged arbitrary and unjust dismissal, without due cause, contrary to custom and engagement, reasonable notice not having been given.

Mr. Dickens, Q.C., and Mr. C. A. Russell appeared for the plaintiff; Mr. Robson, Q.C., and Mr. Bremner for the defendants.

Mr. Dickens, Q.C., opened the proceedings for the plaintiff by making a lucid statement of the case. He said the gardens, which were the starting point of those which now constitute the property of the Dooars Company, were opened out for the Messrs. Verner and others at Tondoo about 1880, when Mr Cumming joined their service. Subsequently it was deemed advisable that Mr. Cumming should proceed to Assam and take employment on a tea garden in that province. This Mr. Cumming did, remaining in active employment and gaining all possible experience in the interests of the Dooars concern. The Dooars Tea Company was formed about 1886, with Mr Verner as superintendent in India and Mr. Cumming as a divisional manager under him. Mr. Verner was sometimes unwell, and absent from the gardens in consequence, and thus the entire charge of the concern and responsibility of the garden operations were left to Mr. Cumming for lengthened periods. Soon after the formation of the Dooars Tea Company Mr. Verner, the superintendent, had to go home on furlough, and Mr. Cumming acted for him, taking full charge, as he did on other similar occasions. A communication from the board to Mr. Cumming, with an extract from the minutes, was read expressing satisfaction with the manner in which he had discharged his duties, and appointing him deputy superintendent on a monthly salary of 700 rupees, to rise annually till it reached 1,000 rupees a month, and he was also to receive a commission of 1½ per cent on the profits of the Company. This arrangement continued until 1894, Mr. Cumming officiating as superintendent during Mr. Verner's absences till Mr. Cumming went home on sick leave in that year. When at home in October, 1894, he received a letter from the secretary to the company stating that as the board had not found the appointment of deputy superintendent answer the purpose intended, they had resolved to abolish it, but they offered Mr. Cumming the management of one of the company's gardens with a monthly salary of 700 rupees and ½ per cent commission on the profits, and otherwise on the same conditions as the other garden managers of the company. To this Mr. Cumming at first demurred, but ultimately agreed, and in due time returned to India to resume his duties. After reaching the gardens in March, 1895, he received intimation that he was to hold his appointment, as all the other garden managers did, on the condition that it was terminable at any time on one month's notice being given. This, however, Mr. Cumming declined to agree to. A communication from home to Mr. Verner, the superintendent, was read, stating that if Mr. Cumming was unwilling to accept this condition there would be no help for it but to give him notice that his services would no longer be required, but in the latter case to give the customary term of notice. The superintendent then intimated to Mr. Cumming that if he would not agree to the terms offered he was then to accept one month's notice, and forthwith make over charge at an early date named. This Mr. Cumming did and proceeded home in the hope of obtaining redress and compensation from the directors of the Dooars Company. In addition to stating the case as above, Mr. Dickens contended that in the working of tea gardens there was a "season" which closed with the gathering of the last of the crop, generally in December, and that in consequence changes of managers were made at the end of the season. Anyone dismissed, therefore, at the time Mr. Cumming was, would find it impossible to obtain another appointment. It was customary, also to give a manager at least three, but more commonly six months' previous notice of the termination of his engagement even when it was to take place at the end of the year.

At one stage the Lord Chief Justice asked Mr. Dickens if he contended that the Dooars Company had endeavoured to introduce fresh conditions after the engagement of his client, the learned counsel replying that this was so. After the reading of some letters referred to, his lordship remarked that it was eminently a case in which the parties should "meet each other," and he strongly urged a settlement.

The defendant company's counsel, Mr. Robson, Q.C., then stated that he did not admit the plaintiff's statements, that all the correspondence had not been read, and that he was prepared to prove that one month's notice (or one month's salary in lieu of notice) was customary in the Dooars district.

The Lord Chief Justice thereupon made a remark to the effect that if the jury had been deprived of a pleasure he was entirely to blame for it. This was in reference to his lordship having at an early stage urged Mr. Dickens to lead up to the main point as briefly as possible, when the learned counsel, evidently with some regrets, turned over numerous pages of the correspondence, merely reading some of the letters last referred to. After some consultation, counsel announced that a settlement had been arrived at, and it was agreed that a verdict should be given for plaintiff for a sum to be afterwards fixed, on the basis of three months' salary and commission down to July 17th, 1895.—*H. and C. Mail*, March 13.

A CENTRAL LABOUR AGENCY.

Everyone interested in tea will welcome the appointment of the committee who are to draw up a scheme for the formation of a central agency for the supply of labour to the gardens. There will be difficulties, one which may be found in the disinclination among planters themselves to combine towards this end, but if the scheme can be put on a thoroughly practical working basis, there can hardly be two opinions as to the immense advantage it would be to the tea industry.

Local agents have resolved to take tho matter up without further delay, and began with a meeting at No. 12, Mission Row last week at which Mr. D. A. Campbell presided, and at which, by special invitation, were present Mr. H. C. Williams, I.C.S., President of the Labour Enquiry Commission, and Surgeon Lieutenant Colonel D. W. D. Comins. The proposal had the hearty support of those present, and the first move was made in the appointment of the committee alluded to above and which consists of the following gentlemen who have power to add to their number:—G. G. Anderson Esq., of Messrs. Williamson Magor & Co.; H. C. Begg Esq., of Messrs. Begg Dunlop & Co.; A. F. Bruce Esq., of Messrs. Kilburn & Co.; C. C. McLeod Esq., of Messrs. McLeod & Co.; G. A. Ormiston Esq., of Messrs. Balmer Lawrie & Co; C. D. Stewart Esq., of Messrs. George Henderson & Co.; A. Tocher, Esq., of Messrs. Duncan Bros. & Co.; and C. W. Wallace, Esq., of Messrs. Shaw Wallace & Co.

There have been suggestions made in this connection before; but, unfortunately, the idea of combination did not meet with sufficient general support to warrant the projection of any well considered scheme. We trust the committee will be able to make such proposals as will satisfy all concerned, for this question of labour supply has now reached a point when something really must be done. It is most regrettable that the tea industry should year after put lakhs of rupees into the pockets of such disreputable people as the *arkuttis* have proved themselves to be. What is now needed is a strong pull and a pull all together in order to bring about general agreement on the question; and we should say there is little doubt that Government would be willing to lend hearty co-operation to such a project if planters and all interested show that on it they are agreed among themselves.—*Indian Planters' Gazette*, March 21.

INDIAN TEA.

To the Editor of the *Financial Times*.

Sir,—Having read the article in which you brought Indian tea planting companies before your readers as a suitable channel of investment, it occurs to me that you may possibly like to have some confirmation of your advice from one who has long been conversant with the position and development of the industry as a tea-taster and agent in the London market for some of the principal growers.

So little has been known in the past about this branch of our commerce that it is not surprising that investors, as a rule, have regarded it with diffidence, or have altogether ignored it. But the experimental stage has long been passed, and we have now the benefit of some fifty years' experience, with the result that it is proved that nearly all, but not quite all, plantations in India are permanent in respect of soil and the capacity of plant to yield freely and vigorously; that while weather causes some variation in the amount and quality of the yield, such a thing as the failuro of a crop is unknown, and that no limit has yet been found to the consumption of Indian tea.

A most important fact is, that the oldest plantations in Assam still produce the finest tea. Proof of this is to be found in tho history of the Assam Company, which has been at work since 1843, and last year showed a profit of £50,000 on the season's production, equal to more than 25 per cent on the capital, and due to the fine quality of tho tea produced. Another weighty fact is that no other tea-producing country has yet been discovered which can give tea equal to the best from Assam and Darjeeling. Another is, that notwithstanding the steady increase of production, there is in no market of the world a surplus stock of Indian tea, the year's consumption regularly using up all that is grown. Last year 135 million pounds were produced by India; of this, 120 millions at least will be used in the United Kingdom, and the remainder in other countries, where the use of Indian tea in place of China is rapidly increasing to a point which makes them keen competitors with English buyers.

The effect of these developments in trade has been to maintain the market value of Indian tea well above the cost of production. You may like to know some details. A crop of "common tea" costs from 5½d to 6d per lb. to make, and realises 7d to 7½d per lb.; a smaller crop of "good tea" costs about 7d per lb. and the realises from 9d to 10; a still smaller crop of "fine" tea costs from 9d to 10d, and realises from 1s up to as much as 1s 6d per lb. There is, therefore, a good margin left for lowered market value or increase cost of manufacture. The items that would increase cost are: a rise in the value of silver, a rise in froights, or a scarcity of coolie labour.

So much with regard to the general position and prospects of the industry. The would-be investor will, of course, want to know which are the strongest and soundest of the many companies, but it is not my purpose to tell him. Some general hints, however, may perhaps be given. These are: To notice the capital cost per bearing acre, and prefer those whose gardens show a low cost; to ascertain what additions to the planted area have been made out of the profits of past years; to discriminate between those who pay dividends and also create reserve funds, and those who do not to inquire what is the average value of the tea produced, and if the estates are situated in the best districts.

Most of this information can be found in the elaborate tables of statistics now published by some of the stockbrokers, who are beginning to realise that 6 per cent or 8 per cent can bo obtained on investments in Indian tea with much less risk than is run in many kinds of industrial and commercial concerns for the sale of 5 per cent. From a shareholder's point of view it is much to be desired that the older companies would rearrange their capital on a modern basis, divided into the preferred and deferred shares of small nominal amount that the investor of to-day so much prefers.—I am &c., ASSAM.
—*Financial Times*, March 11.

VARIOUS PLANTING NOTES.

THE "BULLETIN" of the Botanical Department, Jamaica, contains:—Rum Aroma: III; Notes on the Orange; Coccidæ or Scale Insects: VIII; Insecticides; Grants for Agricultural Education; Notes on Curing Cocoa; Notes on Kola; Orris Root; Wild Lime; Ornamental Plants; Eucalyptus Oil in Yellow Fever; Ferns: Synoptical List.—XXXII; Castleton Gardens; Contributions to the Department.

THE KEW BULLETIN of Miscellaneous Information for February contains:—Gold Storage of Fruit; Decades Kewenses: XXVI.-XXVII; Dominica; New Orchids: 16; Two African Holarrhenas; Natural Sugar in Tobacco; Miscellaneous Notes; Botanical Magazine; Hooker's Icones Plantarum; Hand-list of Orchids; Water Supply; The British Honduras Pine; Beetle Larvæ attacking Orchids Solanum torvum in Assam.

JAVA CINCHONA SHIPMENTS.—Our Amsterdam correspondent writes on March 2nd:—"It was made known today that tho February shipments from Java of cinchona-bark amounted to about 546,000 Amsterdam lb., against 756,000 lb last year. This makes for January-February 1896, 1,516,000 lb against 1895, 1,413,000 lb; 1894, 1,351,000 lb; and 1893, 1,255,000. Our next sale will contain about 6,000 packages of bark, and tho stock in first hand, all told, is now about 15,100 packages.—*Chemist and Druggist*.

Correspondence.

To the Editor.

GUANO FOR COCONUTS.

DEAR SIR,—Can any of your readers inform me whether guano is good for coconut trees, and how much per tree should be applied? It seems to me it might be useful on distant parts of an estate, where bulky manure could not be so conveniently applied.—Yours truly, PROPRIETOR.

YIELD OF CACAO PER ACRE.

41 Eastcheap, London E.C., 19th Feb. 1896.

SIR,—Your correspondent A. v. D. P. of the 13th December states, that an African estate of 300 acres yields 19½ cwt. of cacao por acre; allow me to inform him that in Grenada, West Indies, there is an estate which yields that quantity stated; but of course it is highly manured; whereas the African estate is virgin soil, hence the large return.—Yours truly, A. G.

CEYLON AND AFRICA.

DEAR SIR,—Agriculturists and others in Ceylon, ought to be most thankful that we are spared any such similar visitation as that referred to in the appended extract from a letter recently received from South Africa. I wonder if the introduction of the blood-sucker, chameleon and other of the lizard tribe, in LARGE numbers, would be beneficial in the way of keepng the locust pest in check.—Yours faithfully, E.F.T.

Extract.

"The plague of locusts in this part of the world, Natal, is becoming most serious! On this estate alone out of a plot of 600 acres we have lately dug up over a ton and a half of locusts' eggs. They lay in cocoons—each cocoon contains on an averago eighty eggs, and 550 cocoons go to 1lb., so for a ton and a half we destroyed the small number of 147,840,000 eggs—this is only a part of the destruction carried out all over the Colony, and still immense quantities are left to hatch and carry destruction to vegetation wherever they appear. Wise and very stringent measures are however being taken by Government for the eradication of the pest."

P.S.—Can the insects referred to be descendants of the Mosaic plague?

TEA CHESTS: THE ADULTERATION OF COFFEE.

March, 4.

SIR,—When I sent you the information about the self-opening tins for Tea, I did not know so much about the subject, as I do now, and I would like to explain to your readers some of the points.

I stated that the lids were made perhaps best in this country and shipped out, but I did not say tbat as soon as the patent had expired the rims to fit the lid were also run out of tin. Now the point is this, that the lid and a small rim can be shipped out as they fit one another, and this small rim can be most easily soldered on to the flat sheet of tin, which would be at the top of the Tea chest; therefore you will have an air-tight joint.

Another point which had not occurred to me was that in making some of these tea chests in India, by placing four tin boxes in close position to one another, the packages can be made to hold up to 150lb. of tea and only one chest is required (of wood); hence there is a very great saving and beyond this the tea is all packed in to a uniform size, Very tightly it arrives home, and the Customs at once see that it is carefully weighed. They tare one package and by this means get to know the exact weight of the tin and the lid, therefore if they scale a few of those unopened tins they have a perfect record of the weight without opening, taring, bulking, or anything else.

The object of putting the name of the estate on the tea chests is for advertisement. This advertisement have been handed down by the Chinese and in China the natives used to buy the tea because they knew the name or brand or mark of the estate or packer. These chests from Ceylon now come into the hands of the grocers, and also into the hands of the large stores here. These people find it advantageous to order home from Ceylon so many chests of tea and they send out a sample to the Ceylon garden asking at what price they can be supplied with a certain tea. The Ceylon garden, seeing this order coming along, puts on a profit, knowing that it will be saved all its expenses, and stipulates for cash being paid through the Bank, hence the planter who has been fortunate in having his tea selected gets a considerable advantage. This trade has commenced and is rapidly extending.

There is one other point which you will find crop up very shortly, and that is, the Legislature are about to put in force the question of "adulteration of coffee." This has been brought before the Chamber of Commerce of London and in the presence of some of the members of the Committee of the Chemical Trade Section, at which analytical chemists attend. It was argued and admitted that the producer of milk had now to be so careful that he had to keep cows giving an excess of cream to fetch up the quality of milk of any cow that yielded quantity without quality.

The analytical chemists were next asked whether it was true that they were well aware that in very few instances could pure coffee be obtained when a cup of coffee was asked for in any restaurant, café or hotel, or railway bar. They were further asked if they did not consider that it was unfair to attack the producer of milk and at the same time allow the vendor of the coffee to put any muck and filth into it and call it "Coffee." They admitted that the state of the law was such that it ought to be altered and Sir Michael Hicks-Beach is the minister in charge of this department, who will at once put the law in motion. It is thought that if this is properly carried out it will immensely increase the consumption of real coffee because the people who ask for a cup of coffee dread what they may get served out to them.—Yours truly,

THOS. CHRISTY.

THE PRODUCTION OF THE ORIGINALS OF TELEGRAMS.—At the Appeal Court today, Mr. Advocate Jayawardene on behalf of the complainant in a Police Court case from Avisawella moved for a order on the Postmaster-General under section 70 of the Criminal Procedure Code to deliver to the Police Magistrate of Avisawella the original of a telegram for the purposes of being put in evidence. Mr. Jayawardene tendered an affidavit from his client and stated that the Magistrate of Avisawella had issued summons on the Postmaster-General to produce the original of the telegram, when the latter referred the Magistrate to section 70 or the Criminal Procedure Code. The complainant was one Paul Jacolyn, the Recordkeeper of the Avisawella Courts, who charged the accused with having given false information to the Magistrate of that Court. The false information consisted of the following telegram received by the Magistrate from the accused:—"Furnished sureties, R600. Did not take bail. Others bailed R1 to Paul and they released." The meaning of which was that the Recordkeeper received a bribe of R1 from each of the other accused and enlarged them on bail. After hearing Mr. Jayawardene, who read the complaint's affidavit, His Lordship Mr. Justice Withers made order directing the Postmaster General to cause the telegram to be delivered to the Magistrate of Avisawella for the purpose of that officer investigating the charge preferred by the complainant against the author of the alleged telegram.—Local "Examiner," April 2.

NOTES FROM HOME.

Dover, March 7.

The Evening *Standard* had a very pertinent editorial note the other day, expressing surprise at the interest still felt in the

CULTIVATION OF COFFEE

in so many different countries, in the face of the steadily decreasing consumption in the United Kingdom. The cause of such decrease is, of course, found in the persistent adulteration, or admixture with chicory—so that it is almost impossible to get a cup of pure coffee in Britain. This was brought out very clearly by the Deputation which recently waited on the Chancellor of the Exchequer—particulars of which have, no doubt, been already published by you. The following editorial deliverance on the subject is from the *Manchester Guardian* and may be worth putting on record :—

The Chancellor of the Exchequer yesterday declined to entertain the idea of abolishing the duty on coffee. The deputation of coffee-traders which waited upon him had some good reasons to urge in favour of their proposal. The trade in coffee has been steadily declining for many years. Compared with that of 1873, the trade of the past year shows a decrease of a million hundredweight, so that the import of coffee is now only about three quarters of a million and the export half a million hundredweight. This decline is attributed to the hindrances thrown in the way of merchants by the system of warehousing in bond, which is necessitated by the duty. If, say the traders, coffee could be imported free, it could be prepared for use here as cheaply as in Hamburg or Holland, and the trade would revive. The consumption of coffee in England has steadily diminished—in 1870 nearly one pound was consumed per head, and in 1894 only about two-thirds of a pound,—so that the future of the trade evidently depends upon the extent to which the exports can be increased. Sir Michael Hicks-Beach argued that the decline of the export trade was due to other causes, such as the tendency of Brazilian coffee to go to Continental ports rather than to London. It is not easy to decide which of the two explanations is the true one, but if tho coffee trade is being ruined by a duty which only produced last year £173,268, there should be little hesitation about the reduction or abolition of the duty.

The strong point made by Sir M. Hicks-Beach, it seems to me, was that, if he abolished the duty on coffee, that on cacao should follow and then it might fairly be said that tea was unduly weighted. "A free breakfast table" would seem to be the only equitable reform in this direction; but I think it was a pity that the Deputation did not have an alternative request to make of the Chancellor, namely, that the rule should be far more clearly and fully enforced of the proportions of coffee and chicory in each packet sold, being printed on in bold type or figures. If even working-people read at a glance "This is mixture of one-fourth coffee and three-fourths chicory": or of "half coffee and half chicory"; or again "three-quarters coffee and one quarter chicory", they would speedily come to know what they were really buying and turn to the packets with the larger proportion of coffee. At present, there is no check on the proportions in the packets sold by the grocers.

Notwithstanding that, according to the deputation, two-thirds of the London coffee trade has, within, the past quarter of a century, been diverted to Continental ports, British capitalists are not behind others in the attempt to grow more coffee. This is seen not only in the Straits and North Borneo (not to speak of revivals in Ceylon and India—with Liberian especially), but also in Java and Central Afric a, in Mexico, Central and even in South America. The latter

COFFEE-GROWING COMPANY

is reported by a friend to have a very large capital at its back, for the purpose of opening a large area of fine land with coffee in the South American State of Colombia. This project is freely supported in the City, notwithstanding the unsettled state of affairs in the neighbouring Republic of Venezuela; but Colombia it seems, bears a better record. On the other hand, the Company's Directors wisely require a preliminary Report by an experienced and competent coffee-planter, and I have been consulted by a city friend as to a suitable Ceylon man for the post. The salary or fee would be £500 and all travelling expenses paid and English agents in the State would give needful assistance in providing guides, interpreters, &c.

There can be no doubt of the steady demand for coffee on the continent of Europe and throughout the Americas. Even if we rapidly gain on the States of Canada with our teas, the victory will be more over the China and Japan rubbish and green, or Prussian-blue-faced teas, than over coffee; although I have no doubt that many of the British emigrants to America during the past 30 to 40 years when they found good tea made available to them, would turn even from coffee, to their original love. I do not see, therefore, that Ceylon and Indian tea planters need fear the extending cultivation of coffee in other lands. We have plenty of room for our tea for years to come, in we onst the inferior China and Japan tea products supplied to North America, Russia and the rest of Europe and Australasia; the demand elsewhere is increasing, and there is already a large and increasing consumption among the natives throughout India and Ceylon of the cheaper inferior teas.

I am sorry to see from Gow, Wilson, & Stanton's weekly report that Ceylon tea has again been weaker in Mincing Lane this time, although exchange is up ¼d in the week, and the quantity offering was small!

In the *Daily Chronicle* of this morning, there are reports of the meetings of two

SOUTH AFRICAN COMPANIES

of some general interest from what was said and, in the case of one, Sir G. W. R. Campbell presided :—

PARDY'S MOZAMBIQUE.

An extraordinary general meeting of the shareholders of this syndicate was held yesterday, at Winchester House, for the purpose of increasing the capital of the company by £20,000.—Mr. E. H. Watson presided, and in moving the resolution stated that the company had paid 267½ per cent. in bonuses and cash, and they had today £111,083 worth of shares in subsidiary companies. It might be asked why, under such circumstances, they proposed to increase their capital. One reason was that if they disposed of those shares by putting them on the market it would have the effect of reducing the price of Pardy's Mozambique shares. Another reason was that when they could realise this money they would be able to pay 350 per cent. more in dividends. They, however, had no right to utilise that money as capital. Acting on the advice of Mr. Pardy, the directors had come to the conclusion not to sell any more of their properties until they were thoroughly developed, when naturally they would command far better prices. They had still the right to locate 219 more claims. —Mr. Pardy, in seconding the resolution, referred to the recent invasion of Dr. Jameson into the Transvaal, and expressed the opinion that that gentleman was simply the victim of deceit on the one side and trea-

chery on the other. He said it was common to describe Dr. Jameson's action as a "raid," but, in his opinion, it would be better described as "Dr. Jameson's Ride."—The resolution was carried after some discussion.

RHODESIA, LIMITED.—An extraordinary general meeting of the shareholders of this company was held yesterday afternoon at Winchester House, for the purpose of confirming the resolutions which were passed at the meeting held on the 11th ult. The resolutions were to the effect that the capital of the company be increased to £300,000 by the creation of 100,000 new shares of £1 each, and that the agreement which was produced for the purchase of certain of the assets of the Buluwayo Mining and Finance Company for £10,000 cash and 60,000 fully-paid shares be sanctioned and confirmed.—Sir George Campbell, who presided, in moving the confirmation of the resolutions, said that the affairs of the company were going on extremely well. As regarded one of the assets, which they acquired by taking in the Buluwayo Mining and Finance Company, they had received the following cablegram from their manager:—"New shaft on the Somerset claims in the Selukwe district has been sunk to a depth of 50 ft.; the width of the vein is 2 ft. Gold is visible throughout." In conclusion, the chairman said, they had several transactions on hand which they thought would benefit the company very much, but it was not advisable at that moment to say more about them.—Mr. R. J. Price seconded the resolutions, which were adopted unanimously.

I have been hearing a little lately of the

INDIAN AND CEYLON EXHIBITION

to be opened this year at Earls Court, and I am inclined to think well of the enterprise of Mr. Hartley (whom I hope to meet shortly), the more especially as he and his spirited brother-capitalists do not require any subsidy from Governments, but only their countenance and such as can fairly be given in loans of exhibits. From a letter addressed to me by Mr. Hartley, as Director, I quote as follows, in case you have not already had the particulars:—

"I noticed some few weeks ago there was an article in your paper in reference to our proposed Exhibition which was not altogether satisfactory to us. Whoever wrote it was evidently under the impression that it was the intention of this Company to apply to the Ceylon Government for pecuniary assistance with regard to organizing the Ceylon Section. I may tell you that we have no idea whatever of doing anything of the kind. This Company is purely a commercial undertaking, and is provided with ample funds for carrying out the proposed work.

"In all probability we shall send out a commissioner from here at a very early date to organize the Ceylon Section, and I will make it my business to give him an introduction to you, although it is possible he may not be unknown to you, and if you can render him any assistance, I know my friend Mr. Christy will greatly appreciate it.

"The terms we offer to native exhibitors are by no means onerous. This being, as I say, a commercial undertaking, we are unable to grant free space to exhibitors except for loan exhibits. The charge we propose is a reasonable commission upon takings only.

"On the list of the Honorary Committee you will notice a number of names well-known in Ceylon.

"Since writing the above, we have received a letter from the Secretary of State, informing us that a despatch has been sent out by the Colonial Office to your Government.—H. H."

In case you have not had it already, I give a letter from Sir James Linton, Chairman of the Fine Arts and Loan Committee of the Exhibition, as "Ceylon" is expressly mentioned by him:—

EASTERN ART AT EARL'S-COURT.

To the Editor of the *Times*

Sir,—Last year you were good enough to insert a letter in your columns from Sir George Birdwood appealing for contributions to the Loan Section of the Empire of India Exhibition at Earl's-court; may I ask you to grant me the same favour upon the present occasion for the same purpose? The intention of the honorary Committee, of which I am Chairman, is to follow the same lines as the very successful gathering of loan objects of Indian art brought together at Earl's-court last year, with the addition of Ceylon, Hongkong, and other Crown dependencies in Asia.

The honorary Committee of advice consists of Vice-Admiral the Hon. Sir E. Freemantle, Lieutenant-General Sir Andrew Clarke, Sir George Birdwood, Mr. M.M. Bhownaggree, M.P., Mr. C Purdon Clarke, Mr. F. H. M. Corbett, and Mr. G. Collins Levery.

The educational and artistic value of the collection of last year, and the very great interest attached to it, lead my Committee to hope for the help of all who are interested in the advancement and conservation of Eastern art and art manufactures, so that we may present to the art-loving public an even more exhaustive and representative collection in the coming exhibition of this year.

The primary object of my Committee is to stay, if possible, by the exhibition of fine examples (thereby encouraging their production), the rapid decay of good native art and workmanship, a decay that seems ever to be one of the evil consequences of the influence of Western civilization upon the arts of the East, and to this end my committee appeal to such of your readers as are desirous of helping so good a cause by lending for exhibition such objects as are in their possession.

The loan Committee will be glad to receive, as early as possible, particulars from owners of historic objects emanating from or connected with India, Ceylon, or any of our Eastern possessions, such as arms, furniture, costumes, jewelery, ancient and modern art works of all kinds, models of natives of the various countries, their dress, objects of worship, musical instruments, means of conveyance, amusements, and anything of ethnological or general interest. Historical pictures, portraits of generals and statesmen conspicuous in the history of British conquest and colonization in the East, as well as paintings by European and native artists in oil or water-colours, black-and-white drawings, and miniatures connected with India, Burma, Ceylon, and the East generally, are particularly desired for this collection.

The directors of the London Exhibition Company will undertake every reasonable responsibility for the reception, custody, insurance against fire, damage, and loss, and the return after the close of the exhibition of the objects lent.

If those who have works or objects which they are willing to lend will be good enough to communicate with George Collins Levery, Esq., C.M.S. Hon Secretary, Fine Arts and Loan Section Committee Earl's-court, S.W., the necessary form of information will be forwarded by return.

I beg to remain yours faithfully,
JAMES D. LINTON.

5, Cromwell-place, South Kensington, S.W.,
March 2nd.

PREFERENCE SHARES IN TEA COMPANIES.

I call attention to an article on another page from a London financial paper on Indian and Ceylon Tea Companies and Preference Shares, showing how good and safe these investments are from British Capital. (The article is given on, page 707. An average of 4½ per cent. may not seem much to Colonial readers; but in the eyes of home investors, with Consols yielding less than 2½ anything safe which gives 4 per cent or over is bound to be run after; and as the attention of the home investing public is being, more and more, turned to Tea Plantation Companies, we may be sure of an increasing demand for both Preference and Ordinary Shares in good Companies.

I was much pleased to learn from DR. MORRIS of Kew, of his interesting trip to

THE BAHAMAS

from which he recently returned. He refers me to an interview reported in *Commerce* as giving the

best account of his trip. (It is quoted on page 709.

Dr. Morris is to deliver an illustrated lecture before the Society of Arts on March 18th, on the "Bahamas Sisal Industry" which is sure to be full of interest.

I am exceedingly pleased to learn of

MR. E. E. GREEN'S

forthcoming work on the "Scale Insects" which constitute so large a proportion of the worst enemies of tropical products. The prospectus has been already noticed in your columns, and I sincerely hope the venture—a very plucky but risky one financially—will be well supported in Ceylon. Surely, every Tea Estate. Company should subscribe for at least one copy to put in the hands of its Chief Manager for reference; and the Ceylon Government most certainly ought either to take 50 copies, or make a substantial grant in aid of the work—one of great economic importance to the Colony as I am sure Dr. Trimen will report, if called on by Governor Ridgeway. Writing to me under date the 1st instant, Mr. Green states:—

"I have received very kind encouragement from many of the leading Entomologists in England. But the public has not as yet responded very freely to my invitation for subscriptions. I believe I can count scarcely more than a dozen subscribers at present! But the prospectus has not been out very long. My publisher's estimate for the production of the work is a cool *£1,000*—so I shall require 200 subscribers at *£5* to cover the cost. I am informed that I shall be fortunate if I obtain half that number: the publisher warning me that the demand for scientific works of the kind is very limited. Don't you think that this is a case where the Ceylon Government might give a substantial grant? It is surely of as much *use*—though not of such general interest—to the public as Moore's work on the Butterflies and Moths of Ceylon which was largely subsidized by Government."

Most certainly—our reply is—this work on the "Coccidæ" is fully as deserving of official support as that on the Butterflies. Could not the Planters' Association Committee move in the matter—(1) by taking the names of subscribers and (2) by requesting some official help to so desirable a production? Surely no planter or merchant in Ceylon would desire to see Mr. Green out of pocket, in addition to all the trouble and time he has given to a useful work in the interests of science, of his adopted Colony and of his brother planters?

"INDIGENOUS COFFEE."

Dear Sir,—With reference to your issue, dated the 29th ultimo, I notice a very interesting letter from a correspondent signing himself "R. S. Hagan," anent the above. I heard of the existence of the above variety of coffee in the locality "as mentioned by your correspondent" through the late Mr. R. E. Norman, an old and an experienced planter in the Ouchterlony valley. This variety of coffee was brought to his notice, I think, by a Mr. Cootes some 25 years ago as existing in the Suffolk and Goodalore Mullay belt, and when I was appointed a Superintendent of the Goodalore Mullay Estate, I was told about this variety and was asked to institute a search in the above belt for the trees in question. I was fortunate enough to find two trees in close proximity to each other, the appearance and description of the trees I discovered tallying exactly with the observations made by your correspondent in the issue mentioned, except in that the height of the trees discovered by me was not more than 20 feet; the observations made by your correspondent during the time he was in the valley with reference to this species of coffee is borne out fully by the investigations I made at the time. Regarding the difference in the fruit between this variety and the coffee arabica, the only cause that I can ascribe to the want of maturity in the beard of the indigenous coffee is that our investigations in this part of the functions of the tree has not been carried far enough, for whenever I visited the locality in which the trees were, to see how the berries were progressing towards maturity, I invariably found the trees quite empty of berries, having been stripped of their fruit by monkeys and birds which used to abound in the vicinity of the above trees. I tried to preserve the berries by tying muslin bags around them, but my efforts always proved futile, for the monkeys invariably pulled the bags off and took the berries, so I could not get the opportunity of seeing if the berries would come to the same state of perfection and maturity as the berries of the coffee arabica. The late Mr. Lawson was much interested in this species of coffee; I sent him several branches of it with blossom, and later on a branch with berries; we also sent Mr. D. Hooper specimens of branches, blossom, and berries of the trees under observation, but I have never heard what conclusions the above gentlemen arrived at in connection with the same; so if this letter should attract Mr. Hooper's attention, I should feel much obliged to that gentleman if he would kindly make it known through the medium of your valuable paper the results of his investigations, as I am sure it would be very interesting to those interested in the matter. I am sorry to add that the tree I discovered has since been destroyed by the opening out of the locality in which I found the "wild coffee," but happily I am acquainted with another locality in which this species of coffee abounds. I shall be glad to send specimens of the tree to anyone who is anxious to go into the matter scientifically with a view of trying "grafting, budding and cross fertilization, &c." and thus establish a new variety of coffee.—Yours faithfully, R. DE R. N.

Suffolk, 9th March 1896.

"WILD COFFEE."

(*Diplospora sphærocarpa.*—DALZ.)

Mr. Hooper has kindly sent us the following extract from the "Pharmacographica Indica," which gives some further information on this interesting tree:

"The berries of this trees, growing on the Western Ghauts, are known as 'Wild Coffee.' and, when ripening, are eaten by birds and jackals, but they have not been known to be used as a substitute for coffee either by the natives or European planters. The berries are from half to three-quarters of an inch in diameter, and are crowned by a calyx and areole. The seeds, numbering from 4 to 10 are arranged in a vertically imbricate manner in the sweetish pulp; they are round and flattened in shape, glossy on the surface, light brown in colour and horny in consistence. The seeds turn dark brown when roasted. throwing off the parchment like testa, and when powdered, possess an aroma resembling that of coffee. The roasted and powdered seeds were submitted to Brig.-General Kenny Herbert, a great authority on Indian cookery, and he reported as follows:—'The percolated liquor had a remarkably pleasant taste having a marked flavour of coffee. Indeed the only difference I could detect was this,—the liquor was not so brown in tint as coffee, being more golden brown than dark brown and the beverage brewed seemed not quite so strong as would have been produced by a similar quantity of coffee powder. There can be no doubt of the distinct coffee-like properties of this powder and the absence of any twang or conflicting flavour to mark its pleasant taste.'

The seeds contain an alkaloid, which can be separated in the same manner as caffeine, an astringent acid, an aromatic body, some fat, one or more sugars, and four per cent. of mineral matter. The dried extract obtained by boiling water is 16 per cent. or something less than that obtained from cultivated coffee berries."

It will be seen that, coupled with the immunity that it seems to enjoy from leaf-disease "wild coffee" appears to have a future of some importance before it. We are taking steps to procure samples of the ripe seed to send home for report and valuation, but judging from the high favour the sweet pulp is held in by those inveterate coffee thieves, monkeys and birds, we are somewhat doubtful when we shall obtain them. A letter emphasizing this difficulty will be found in our correspondence columns: even tying muslin bags round the fruit, usually an effectual method of preservation, was found to be of no use.

D. sphærocarpus is found, by the way, on the higher ranges of the Western Ghauts, all the way from Bombay southwards.—*Planting Opinion*, March 28.

A CUP OF TEA.

Has any one the least idea of the modern uses of tea? In the days of our childhood a lesson of tea was easily got by heart. We read that the tea plant grew in China, and at certain set times the leaves were gathered by the natives thereof, who after drying and rolling them, exported them for use as a beverage to our own and other countries. That was all, or about all we had to remember on the subject. Here and there some old bachelor dominie might add a few exhortations of his own on the proper way of preparing tea, how important it was to see that the kettle boiled, and how the teapot ought to stand at least fifteen to twenty minutes' "drawing" on the hob.

Nowadays we have changed all that. We no longer speak of "drawing" tea, as though the tea-pot were some special kind of carrier's conveyance, and we are all aware that the tea plant has been successfully introduced into many other parts of the world besides its original Chinese home. The bankrupt Ceylon Coffee planter found in tea his deliverance from all the harassments that followed the appearance of the mysterious *Hemaleia Vastatrix* on his estate, and the Mysore and Assam growers have obtained a world-wide reputation.

So far so good. But there is a great deal more to learn about tea than that. When we have finished our afternoon cup, and Mary Jane has emptied out the teapot, we are apt to imagine, if we ever give the matter a moment's thought, that the leaves it contained are done with when they are thrown away. By the natural process of decay, the tea will be resolved into its original component parts, and as our neighbours across the Channel say, "Voilà"! there you are. But not so, dear reader. The tea has only, as it were, begun its career then, and many are the processes through which it may yet have to go.

Tea refuse is highly valuable, and is turned into account in various ways as follows; The best of it is sold to be redried, and used as tea again. In this metamorphosis it is generally mixed with fresh tea, and resold at a cheaper price. This process may be repeated as long as it is possible to delude any one into buying the adulterated article, but by-and-by a point is reached when no more tea, so called, is to be got out of the mixture. In this connection a curious fact may be mentioned. The old tea is mixed in one of its downward stages with the sweepings out of the tea chest after they have been emptied. Nails and other rubbish are sometimes present in this mixture in too large proportion to be palatable, and to clear these away strong magnets are employed, which draw all the iron at least from the other ingredients. It can hardly be supposed that any of the tea drinking will regret the loss of this tonic addition to their cup.

Then you are done with it, you say? Not at all. Old tea leaves help to make the basis of those beverages, aptly termed "suckers," first popular in America, but now in use here also, drinks which are sucked hrough a straw, and the process is so ingenious that no one uninitiated would recognise in the refreshing drink any reminiscence of the kitchen tea-pot; but there, as we are credibly informed, it is, for all that.

And what after that? Well, the refuse left after all these operations was not until recently considered of any commercial value, but even for it some use has been found. Old tea leaves, it seems, make capital fertiliser, and ardent gardeners are now using the sweepings of tea refuse in this way. Tea leaves have long been admittedly useful helps to the housemaid. The judicious use of them will make the dullest table glass shine, and we are all familiar with the sight of tea leaves sprinkled over the carpet before sweeping, but it is new for the gardner to make to tea manure.

However, if any of the readers of "The Presbyterian" are on the outlook for a good and inexpensive compost, let them try the effect of the drainings of the tea-pot. A sackful of tea leaves is the proper quantity to start with, so the amateur horticulturist will find his work cut out for him during the winter months in collecting the necessary amount. Then when the happy spring time comes, let him sally gallantly out to his back garden, bearing his sack, and let him sprinkle his centre plot thickly as with rose leaves in Vallombrosa, every brown tea leaf reminding him of pleasant social half hours by the drawing room fire. He could, in fact, have the remains of each individual tea fight on a separate plot thus, rearing to himself a sort of private monument like that of the ancient Egyptians, on which lie hidden sentiments of past *ennui* or enjoyment would be inscribed. But there is no use in carrying the point further. Everyone can see what a wealth of ideas lie under the suggestion, and when the garden blooms with gay and vigorous beauty, the gardener will, as he sips his afternoon tea out of doors on his lawn, be more than ever grateful for the "cup that cheers" not only him, but his garden.

Such are some of the recent "wrinkles" about tea, and I think I have written enough to show that there is more in the tea-pot than the tea-drinker always wots of.—*Presbyterian*.

TEA IN AMERICA.

New York, Feb. 26.

Demand is meagre, and the same dull condition and low prices continues. It is still a buyers' market except on lines which are scarce.

Today at noon the Montgomery Auction and Commission Company will sell 7,230 packages, viz.: 1224 half-chests Moyune; 535 half-chests and boxes Pingsuey; 20 half-chests Japan; 50 half-chests Japan; basket-fired; 35 half-chests Japan Nibs; 903 half-chests Congou; 320 packages India, Java and Pekoe; 1057 half-chests Foochow, new season's; 3,086 half-chests and boxes Formosa, new season's, including some desirable teas.—*American Grocer*.

TEA IN AUSTRALIA.

China tea continued in demand at steady rates. Sales reported comprising 800 half-chests common congou at up to 4¼d, 1,400 half-chests panyong at 5d to 6d, 600 half-chests panyong at 6½d to 8d, 1,000 boxes congou at 5½d, and 100 quarter-chests buds at 5¼d. Of Ceylons 650 chests have been placed at prices ranging from 6d to 1s. At auction on Tuesday a catalogue of 431 chests Ceylon was disposed of, 303 chests pekoe at 6d to 7¼d, and 128 chests pekoe souchong at 5¼d to 6¾d. At auction on Wednesday a catalogue of 3,282 half-chests and 145 quarter chests China was offered. There was a good demand at unaltered rates, and sales were made of 1,805 half-chests common congou to good medium panyong at 4d to 5¼d, and 145 quarter-chests buds at 5d to 5½d.—*Australasian*, March 14.

DEAFNESS. An essay describing a really genuine Cure for Deafness, Ringing in Ears, &c., no matter how severe or longstanding, will be sent post free.—Artificial Ear-drums and similar appliances entirely superseded. Address THOMAS KEMPE, Victoria Chambers, 19, Southampton Buildings, Holborn; London.

CORAL AND CORAL REEFS.

D. Andrew Wilson delivered the concluding lecture at Cork, under the Gilchrist Educational Trust, and took for his subject "Coral, Coral Makers and Coral Reefs." There was a very large attendance.

Dr. Wilson, in the course of his lecture, said the subject of coral involved two distinct phases of nature. The first question they had to consider was coral animal work, and, secondly, they had to study how that animal had been able to rear up what had been well called the imperishable masonry of the sea. Coral was a kind of chalk. The scientific name of chalk was carbonate of lime, and coral was a hard description of carbonate of lime. The Romans believed the coral was a plant, that it was soft in its native waters, and became hard when exposed to the air. Curiously that belief that coral was a plant remained as a part of scienco till about 150 or 200 years ago, About 150 years ago a certain Frenchman, the Count de Marseille, descanted amongst other things on the history of the sea, and the coral plant—that was the red coral found in the Mediterranean sea. He had a student, Peysonnel's, who went to the North Coast of Africa there to study coral. He wrote home that they had all been mistaken in thinking that coral was the work of the plant, for he discovered it was the work of an animal. They pigeon-holed his reports, and one who took pity on him wrote to him saying to cease sending his reports. They had decided that coral was a plant, and nothing could change the course of nature because they had so decreed. He then sent his report to the Royal Society of London, and they published his report, and gave forth to the world that coral was the work of an animal. The lecturer then gave a lengthened and interesting description of the coral animal and its internal structure, which he likened unto an excise ink bottle. The difference between coral animals and sea anemones was firstly that coral animals made a skeleton, whereas sea anemones did not; secondly, coral animals were generally single. The fact that coral animals were compound gave them great power—the power of budding and increasing and making a tree. Illustrations of the different forms and shapes of coral were depicted on the screen. Dealing with the conditions of coral life, he said that corals required a certain heat and they required a certain depth. They would not get coral islands in any place where there was not from 60 to 66 degrees of heat. If they drew a line 1,800 miles at each side of the equator, between those two lines they could find living coral. They had plenty of fossil corals in the rocks in the British seas and that indicated a time when the climate was very different from what it was now. There was only one coral existing in British seas—off the Devonshire coast they got a single cup coral, a remnant of a once prolific coral. Living coral could only exist at a depth of from 160 to 200 feet. He questioned very much whether any living coral went down 240 feet. Coral wanted light and air. In fact corals flourished best where the water was roughest and where they found the sea was agitated, and where the coral could get plenty of oxygen to live on. Darwin's theory with regard to coral was that they could only explain the erection of coral by taking into account one circumstance, the sinking of land. There were three kinds of reefs. First was the fringing reef. The island of Mauritius was surrounded by a fringing reef, which practically meant that the coral animals had built a reef on the sides of the mountain. Suppose the island began to sink, tho coral reef grew upwards, and as the island went do vn they would get a barrier reef. The third kind of reef was the perfect form of coral island—what was called lagoons or atolls. Darwin's theory was that one reef was the formation of the other. The lecturer expounded and supported this theory. In concluding he said the wish of the Gilchrist Trustees was that some educational benefit would accrue to them. He believed they were in want of an extension of technical edcation. He believed it was one of the most important things they could have. If they were to have "Made in Germany" not quite so frequently on products in that country, the workmen had it in their own hands. If they could give the same stuff as was made in Germany, only a little better, it would be meeting Germans on their own ground. The Germans had the benefit of technical education, and they, in these islands, had all that time been nursing, in the hope that they were quite equal to Germans, with their old common rule of the thumb. If these lectures had the effect of impressing on the large and intelligent body of workingmen whom he was addressing—that in themselves lay the root of maintaining their future success and superiority—then he knew that the Gilchrist Trustees would consider their money had been well spent in sending their lecturers to Cork. What use were these lectures to be to the man in the street? They devoted so much time to hammering away at politics that they had no time to ask themselves something about the world itself. What was the difference between one man and another in that life? The difference was not in wealth, was not in position. The difference was in the opportunity of getting out of the daily rut they lived in. The difference between one man and another was that one man lay in the rut, and the second man, with a little aspiration, perhaps begotten at a Gilchrist lecture, got his head a little above the rut, and saw something of the blue sky of intellect which was always beneficiently shedding its rays upon them if they turned their faces to the rising sun. He wished that they would cherish something that they heard at the Gilchrist lectures which would make them take a little study of these things, not to put money in their pockets, it would not do that, but to increase their enjoyment of life by understanding something of the world, and when they had climbed through the hill of difficulty and had come to the summit of the mountain they might see foot-steps throughout the shining valley.—*Cork Constitution*, Feb. 18.

DRUG REPORT.

(From the *Chemist and Druggist.*)

London, March 12.

ESSENTIAL OILS.—Lemongrass oil is firmly held at 2½d per oz for fair native qualities. Citronella oil is still quoted nominally at 8s per lb on the spot, but it would probably be possible to buy, with an order, at least a couple of pence below that figure. For arrival 1s 7½d per lb c i f April-May, would now probably be accepted. Arrivals have been very heavy lately, the "Clan Murray" which came into port today, alone bringing 63 7 to 8 cwt drums, and 138 cases and kegs.

CAFFEINE.—Very quiet; 18s per lb., however, is still the quotation.

SPICES.—Nutmegs are very quiet, and Mace remains dull of sale.

MR. E. E. GREEN ON A CEYLON INSECT.—At a meeting of the Entomological Society on March 4, Mr. E. E. Green exhibited a larva of an homopter, ous insect—one of the Cicadnæ—from Ceylon. having what appeared to be a head at its caudal extremity. He pointed out that the larva had caudal appendages which might be mistaken for hairy antennæ, and pigment spots resembling eyes on the antepenultimate segment of the body. The insect walked either backwards or forwards, and when first seen looked like a beetle of some kind-the caudal extremity representing the head.

CLOSETS, Urinals, Night Commodes, Stables, Kennels, &c. should be lightly dredged (after cleansing) with CALVERT'S 15 per cent. CARBOLIC POWDER, to destroy bad odours and to kill or keep away insects.—The most effective preparation.—In ½ lb., 1 lb. and 2lb. dredgers, at 6d., 1s., & 1s. 6d. each, from Chemists and Stores.

F. C. CALVERT & Co., Manchester.

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce).

Colombo, March 30, 1896.

EXCHANGE OF LONDON: CLOSING RATES, *Bank Selling Rates*:—On demand 1/2 9-32 to 11-32; 4 months' sight 1/2 5-16 to ⅜; 6 months' sight 1/2 11-32 to 13-32. *Bank Buying Rates*:—Credits 3 months' sight 1/2½; 6 months' sight 1/2 17-32; Docts. 3 months' sight 1/2 11-32; 6 months' sight 1/2 9-16 to 19-32.

COFFEE.—Plantation Estate Parchment on the spot per bushel, R14 to 16 00.—Nominal. Very scarce. Estate Crops in Parchment, delivery, per bushel, no quot. Plantation Estate Coffee, f.o.b. on the spot per cwt, R77·50 to 82.—Nominal. Very scarce. Liberian parchment on the spot per bushel, R11·50 to 12·00.—Nominal. Very scarce. Native Coffee f.o.b. per cwt. R60 to 62.—Nominal. Very scarce.

TEA.—Average Prices ruling during the week: Broken Pekoe, per lb 50c. Pekoe per lb 34c. Pekoe Souchong, per lb 33c Broken mixed and Dust, per lb 29c.—Averages of Wednesday's sale.

CINCHONA BARK.—Per unit of Sulphate of Quinine, per lb 1½c. to 3c. Twigs and branch no quotation.

CARDAMOMS.—per lb R1·00 to 2·00.

COCONUT OIL.—Mill oil per cwt. R15·25 to 15·12. Dealer's oil per cwt. R15·00 to 15·12. Coconut oil in ordinary packages f.o.b. per ton 340.—In small packages. Early shipments.

COPRA.—Per candy of 560 lb R40 00 to R48·00

COCONUT CAKE: (Poonac) f.o.b. per ton, R65 to 70.

COCOA.—Unpicked and undried, R30 to 38.

COIR YARN.—Nos. 1 to 8 { Kogalla per cwt. R9 to 18. / Col. side ,, R7 to 14.

CINNAMON.—Nos. 1 & 2 only f.o.b. 66c.

Ordinary Assortment, per lb 62c.

PLUMBAGO: Large Lumps per ton, R150 to 330. Ordinary Lumps per ton, R130 to 290. Chips per ton, R80 to 140. Dust per ton, R30 to 90.

EBONY: per ton.—No sales.

RICE.—Soolye per bag, R7·00 to R7·95.

Pegu and Calcutta Calunda per bag R7·80 to R8·15.
Coast Calunda per bushel, R3·00 to R3·35.
Muttusamba per bushel, R3·10 to R3·50.
Kadappa and Kuruwe per bushel,—no quotations.
Rangoon Raw 3 bushel. bag, R9·00.

FREIGHTS.

Cargo.	Per ton London per str. s. d.	N. York per str. s. d.	Trieste per str. s. d.	Mar'lles per str. s. d.	Hamb', Bremen &c. s. d.
Tea	20/	30/	25/	25/	17/6
Coconut Oil	17/6	27/6	25/	..	17/6
Plumbago	17/6	27/6	25/	..	17/6
Coconuts in bags	20/	27/6	25/	..	17/6
Other Cargo	..	27/6	25/	..	17/6
Broken Stowage	10/	15/	..	..	..
SAILERS.					
Coconut Oil	..	27/6	..	..	..
Plumbago	..	27/6	..	..	..

New York rates per steamer with transhipment 12/6 @ 15/ above London rates.

LOCAL MARKET.

By Mr A. M. Chittambalam, 7, Baillie St., Fort.

Colombo, April 9, 1896.

Garden Parchment :—	R14·00 to 14·25	per bushel
Chetty do :—	13·50 to 14·00	do
Native Coffee :—	55·00 to 57·00	per cwt
do f.o.b. :—	62·00 to 63·00	do
Liberian Parchment,	12·00	per bushel (nominal
do Coffee,	60·00 to 62 00	per cwt
CARDAMOMS.—	0·70 to 1·75	per lb (nomina
COCOA.—(nominal)	30·00 to 38·00	per cwt do
RICE.—Market Steady:—		
Kazla	R6·50 to 6·75	per bag
Soolye	7·00 to 7·75	do
Callunda	7·75 to 8·00	
Coast Callunda	3·00 to 3·06	per bushel
Kuruve	2·75 to 2·87	do
Muttusamba	3·25 to 3·50	do

CINNAMON.—Quoted Nos. 1 to 4, at 63c and Nos. 1 and 2 at 66 cents per lb (nominal)

CHIPS.—R75·00 per candy (nominal)

COCONUTS.—Ordinary	R35·00 to 38·00	per 1,000 (nominal)	
do Selected	40·00 to 43·00	do	do
COCONUT OIL.—	15·37 to 15·50	per cwt	do
COPRA.—Market steady:—			
Kalpitiya	R48·00 to 48·50	per candy	
Marawila	47·00 to 47·50	do	
Cart Copra	43·00 to 45·00	do	
POONAC.—Gingelly	90·00 to 95·00	per ton	
Chekku	105·00 to 110·00	do	
Mill (retail)	70·00 to 80·00	do	
EBONY.—quotations at	R100 to R185	(nominal)	
SATINWOOD.—cubic feet	1·50 to 2·12	do	
HALMILLA.— do	1·25 to 1·50	do	
KITUL FIBRE.—Quoted at	R30·00	per cwt (nominal)	
PALMYRA FIBRE.—Quoted nominally:—			
Jaffna Black.—Cleaned	(Scarce)		
do Mixed	R17·00 to 18·00	per cwt.	
Indian do	R7·00 to 9·00	do	
Do Cleaned	10·00 to 14·00		
SAPAN WOOD.—Quoted	55·00 to 60·00	per ton	
KEROSINE OIL—American	7·30 to 7·35	per case*	
do Russian	3·40 to 3·45	per tin	
KAPOK.—Cleaned f. o.b :—	(Scarce)		
do Uncleaned	do		
Croton Seed	13·00 to 17·00	do	
Nux. Vnomica	2·50 to 3·00	per cwt	

* A Shipment has arrived this week.

CEYLON EXPORTS AND DISTRIBUTION 1895-1896.

COUNTRIES.	Coffee cwt. Plantation	Coffee cwt. N'tive	Coffee cwt. Total.	Cinchona. 1896 B'nch & Trunk	Tea 1896 lb.	Tea 1895 lb.	Cocoa cwt.	C'moms lb.	Cinnamon. Bales lb.	Cinnamon. Chips lb.	Coconut Oil 1896 cwt.	Coconut Oil 1895 cwt.	P'bgo. 1896 cwt.
To United Kingdom	3565	5	3570	1128[illegible]	20508196	19683276	12138	28683	199575	79205	28693	38423	26343
" Austria	412	..	412	..	1515	380	..	..	1200	..	7802	3735	..
" Belgium	..	..	..	..	3440	956	..	..	11200	26488	904	204	3167
" France	455	..	455	..	14739	2389	..	..	23100	3500	..	..	447
" Germany	553	5	558	..	24120	34660	193	16904	34300	76902	2549	3598	6011
" Holland	..	..	..	..	..	500	..	..	..	..	..	..	..
" Italy	6	..	6	832	1006	2560	6	..	12600	22400	103	..	264
" Russia	59	..	59	..	46878	2404	..	..	..	..	..	..	..
" Spain	..	..	..	..	9680	11500	..	..	12500	2520	208	..	..
" Sweden	..	..	..	..	..	..	..	..	..	..	..	..	..
" Turkey	..	..	..	..	2062	800	..	..	..	..	..	..	..
" India	177	..	177	1379	259926	137698	2	42399	..	..	9480	295	31
" Australia	732	161	893	..	2196840	1544369	25	..	1000	448	..	285	..
" America	81	..	81	..	60126	75336	..	..	40000	..	9513	32975	51378
" Africa	..	..	..	..	15746	11065	..	..	..	..	..	..	..
" China	15	..	15	..	34568	71374	..	200	10000	..	758	..	..
" Singapore	3	..	3	..	28375	3324	95	..	..	..	2904	2489	..
" Mauritius	..	..	..	..	..	24726	..	..	..	..	..	..	..
" Malta	..	..	..	..	32100	7390	..	..	..	..	..	..	..
Total exports from 1st Jan. to 30th March. 1896	6058	171	6229	115038	23240317		12459	88186	345575	211463	62914		87641
do 1895	20255	378	20633	251931	21614707		12891	127911	418945	159384	82004		54317
do 1894	7394	85	7479	617749	21375622		6859	95494	354341	96682	87199		70925
do 1893	20870	1035	21905	1337[illegible]22	19895922		13680	134983	332689	188186	70088		139235

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, 25th March, 1896.)

	QUALITY.	QUOTATIONS.
ALOES, Socotrine ...	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic	Common to good ...	11s a 76s
BEES' WAX,		
Zanzibar { & White...	Good to fine ...	£7 a £8
Bombay { Yellow...	Fair ..	£6 12/6 a £7
Mauritius & Madagascar..	Dark to good polish ..	£6 10s a £7
CAMPHOR, China ...	Fair average quality ...	180s
Japan ..	,, ,, ,, ..	195s
CARDAMOMS, Malabar..	Clipped, bold, bright fine	1s 1d a 2s 4d
	Middling, stalky & lean	1s 5d a 1s 9d
Ceylon.—Mysore ...	Fair to fine plump ..	1s 9d a 3s 6d
,, Tellicherry...	Good to fine ...	1s 8d a 2s
	Brownish ..	1s 3d a 1s 8d
,, Long ...	Shelly to good ...	1s 6d a 3s
	Seeds ...	3s
,, Mangalore...	Med brown to good bold	2s 2d a 3s 9d
CASTOR OIL, Calcutta..	1sts and 2nds ...	2⅛d a 2⅜d
Madras ..	1sts and 2nds ...	2⅛d a 2¼d
CHILLIES, Zanzibar ...	Dull to fine bright ...	25s a 32s 6d
CINCHONA BARK.—		
Ceylon ...	Ledgeriana Chips ...	2d a 3½d
	Crown, Renewed ..	2d a 4½d
	Org. Stem	1¼d a 3d
	Hybrid Root ...	2¼d a 2½d
	Chip ...	1¼d a 2d
CINNAMON, Ceylon 1sts	Ordinary to fine quill...	10½d a 1s 4d
2nds	,, ,, ...	10d a 1s 3d
3rds	,, ,, ..	9,d a 1s 1d
4ths and 5ths	Woody and hard ..	8¾d a 9½d
Chips	Fair to good ..	3d a 3⅜d
CLOVES, Penang ...	Dull to fine bright bold	7d a 11d
Amboyna ..	Dull to fine ..	3¼d a 4¾d
Zanzibar }	Good and fine bright ..	2⅜d a 2½d
and Pemba }	Common dull to fair ...	1⅞d a 2¼d
Stems ..	Fair ..	1d
COCULUS INDICUS ...	Fair ..	7s a 7s 3d
COFFEE ...		
Ceylon Plantation...	Bold to fine bold colory	114s a 122s
	Midding to fine mid .	102s a 112s
	Low mid. and low grown	95s a 100s
	Smalls ...	93s a 97s
Native ...	Good ordinary ...	85s a 95s
Liberian ...	Small to bold ...	78s a 85s
COCOA, Ceylon ..	Bold to fine bold ...	59s a 71s 6d
	Medium and fair ...	35s a 58s
	Triage to ordinary ...	20s a 50s
COLOMBO ROOT... ...	Fair to good ..	12s a 14s
	Ord. & middling wormy	7s a 9s
COIR ROPE, Ceylon ..		nominal
Cochin ..	Ordinary to fair .	£10 a £15
FIBRE, Brush ..	Ord. to fine long straight	£10 a £24
Cochin ...	Ordinary to good clean	£12 a £14
Stuffing ..	Common to fine ...	£5 a £6 10s
COIR YARN, Ceylon ..	Common to superior .	£12 a £26 10s
Cochin ..	,, ,, very fine ...	£12 a £34
do. ..	Roping, fair to good ...	£11 10s a £15
CROTON SEEDS, sifted...	Fair to good ...	47s 6d a 50s
CUTCH	Fair to fine dry ...	17s a 32s 6d
GINGER, Bengal, rough	Fair ...	17s 6d
Calicut, Cut A	Good to fine bold ...	60s a 70s
B & C	Small and medium ..	50s a 55s 6d
Cochin Rough...	Common to fine dold ..	34s a 37s 6d
	Small and D's ...	30s a 32s
Japan ..	Unsplit ...	22s a 23s
GUM AMMONIACUM ...	Sm. blocky to fine clean	17s a 36s 6d
ANIMI, Zanzibar...	Picked fine pale in sorts	£10 7s 6d a £13
	Part yellow and mixed	£7 17/6 a 10 10/
	Bean and Pea size ditto	70s a £7 12/6
	Amber and dk. red bold	£4 5s a £9
	Med. & bold glassy sorts	90s a 120s
Madagascar ...	Fair to good palish ...	£4 8s a £6 15s
	.. ,, red ...	£5 a £7 5s
ARABIC E. I. & Aden ...	Ordinary to good pale	30s a 50s
Ghatti ..	Pickings to fine pale ...	15s a 48s
Kurrachee..	Good and fine pale ...	35s a 47s 6d
	Reddish to pale selected	22s a 31s
Madras ...	Dark to fine pale ...	16s a 33s 6d
ASSAFŒTIDA ...	Clean fr to gd. almonds	40s a 70s
	Ord. stony and blocky	15s a 35s
KINO ..	Fine bright ..	£20 a £25
MYRRH, picked ..	Fair to fine pale ...	80s a 90s
Aden sorts	Middling to good ...	45s a 65s
OLIBANUM, drop ...	Good to fine white ...	35s a 60s
	Middling to fair ..	20s a 31s
pickings	Low to good pale ...	7s a 15s
siftings	Slightly foul to fine ...	9s 6d a 14s
INDIARUBBER, Assam ..	Good to fine ...	1s 10d a 2s 1½d
	Common to foul & mxd.	3d a 1s 6d
Rangoon ...	Fair to good clean ...	1s 4d a 1s 11½d
Borneo ...	Common to fine ..	11d a 1s 8d

	QUALITY.	QUOTATIONS.
INDIARUBBER, *(Contd).*		
Java, Sing. & Penang	Foul to good clean ..	1s 6d a 1s 2d
Mozambique {	Good to fine Ball ..	2s 2d a 2s 5d
	Ordinary to fair Ball .	1s 2d a 2s 1¾d
	Low sandy Ball ..	10d a 1s 1d
	Sausage, fair to good	1s 4d a 2s 5½d
	Liver and livery Ball .	1s 3½d 2s 2½d
Madagascar {	Fr to fine pinky & white	1s 11¼d a 2s 5d
	Fair to good black ...	1s 3d a 1s 10d
	Niggers, low to good...	10¼d a 1s 7¾d
INDIGO, E.I. ..	Bengal--	
	Shipping mid to gd violet	4s a 4s 11d
	Consuming mid. to gd.	3s 8d a 4s 3d
	Ordinary to mid. good	1s 6d a 4s 2d
	Mid. to good Kurpah...	2s 8d a 3s 6d
	Low to ordinary ..	1s a 2s 6d
	Mid. to good Madras..	1s 8d a 2s 10d
MACE, Bombay, & Penang	Pale reddish to fine ..	1s 8d a 1s 10d
	Ordinary to fair ...	1s 3d a 1s 6d
	Chips and dark	1s
MYRABOLANES, madras	Dark to fine pale UG...	2s 6d a 4s 6d
	Fair Coast ...	4s 3d
Bombay ..	Jubblepore ...	3s 9d a 6s
	Bhimlies ..	3s 9d a 7s
	Rhajpore, &c. ...	3s 6d a 5s 6d
Bengal ..	Calcutta ...	3s 6d a 5s 6d
NUTMEGS—	64's to 57's ..	2s 10d a 3s 2d
Bombay & Penang	110's to 80's ...	1s 4d a 1s 10d
	160's 130's ..	7d a 1s 2d
NUTS, ARECA ...	Ordinary to fair fresh..	8s 6d a 12s
NUX VOMICA, Bombay	Ordinary to middling...	4s 6d a 6s
Madras	Fair to good bold fresh...	6s a 7s 6d
	Small ordinary and fair	4s 6d a 7s
OIL OF ANISEED ...	Fair merchantable ...	10s 6d
CASSIA ..	According to analysis..	7s 9d a 9s 6d
LEMONGRASS ..	Good flavour & colour...	2½d
NUTMEG ...	Dingy to white ...	3¼d a 4d
CINNAMON ...	Ordinary to fair sweet...	4d a 1s 3d
CITRONELLE ...	Bright & good flavour .	1s 9d
ORCHELLA WEED—		
Ceylon ..	Mid. to fine not woody..	11s a 15s
Zanzibar. ..	Picked clean flat leaf ..	10s a 20s
	,, wiry Mozambique	15s a 17s 6d
PEPPER (Black)—		
Alleppee & Tellicherry	Fair to bold heavy ..	2¼d a 2½d
Singapore	Fair	2 7-16d
Acheen & W. C. Penang	Dull to fine	2d a 2⅜d
PLUMBAGO, lump ..	Fair to fine bright bold	15s a 17s 6d
	Middling to good small	3s 6d a 13s
chips dust ..	Dull to fine bright	1s 6d a 8s 9d
dust ...	Ordinary to fine bright	2s a 6s
SAFFLOWER ...	Good to fine Pinky ...	90s
	Middling to fair ...	80s
	Inferior and pickings ...	60s a 65s
SANDAL WOOD—		
Bombay, Logs	Fair to fine flavour ..	£30 a £50
Chips	... ...	5s a £3
Madras, Logs	Fair to good flavour ..	£30 a £50
Chips	Inferior to fine ..	£4 a £8
SAPAN WOOD, Bombay	Lean to good ...	£4 a £6 5s
Madras	Good average ..	£4 a £6 nom.
Manila	{ Rough & rooty to good	£4 10s a £5 15s
Siam	{ bold smooth ...	£6 a £7
SEEDLAC ..	Ord. dusty to gd. soluble	70s a 95s
SENNA, Tinnevelly ...	Good to fine bold green	6d a 8d
	Fair middling medium	2¾d a 5½d
	Common dark and small	½d a 2d
SHELLS, M. o'PEARL—		
Bombay ...	Bold and A's	£4 a £4 7s 6d
	D's and B's	£3 15s a £4 7/6
	Small	67s 6d a 75s
Mussel ...	Small to bold ...	17s a 46s
TAMARINDS, Calcutta...	Stony and inferior ...	6s a 7s
Madras ...	Fair to fine	1d a 1½d
TORTOISESHELL—	Selected	None sold
Zanzibar and Bombay	Small to bold and dark mottle part heavy ...	20s a 26s
TURMERIC, Bengal ...	Fair	7s 3d
Madras ...	Finger fair to fine bold bright	8s a 9s 6d
Do.	Mixed midlng.	7s a 8s
Do.	Bulbs	6s 6d a 7s 6d
Cochin ...	Finger	7s a 7s 6d
	Bulbs	5s 6d a 7s 6d
VANILLOES—		
Mauritius and } 1sts	Gd. crysallized 4 a 9 in.	17s a 32s
Bourbon ... } 2nds	Foxy & reddish 4½ a 8 ,,	11s a 15s
3rds	Lean and inferior ..	7s a 10s
Seychelles ...	Inferior to fine crystallized 3½ a 9 in.	8s a 31s
VERMILION ...	Fine, pure, bright ...	2s 3d a 2s 6d

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for April :—

Vol. VII.] APRIL, 1896. [No. 10.

SEASON NOTES.

WESTERN PROVINCE.—A good maha paddy crop is being harvested and preparations made for sowing yala. Fruit and vegetables reported scarce.

CENTRAL PROVINCE.—The maha harvest is being reaped with very satisfactory results. Dry grain fair, except in Udunuwara.—Matale North crops reported to be excellent. *Stock.*—Hoof and mouth disease reported from Waladane.

NORTHERN PROVINCE.—Maha paddy crops being harvested, results satisfactory except in Panankawan in Vavoniya district. *Stock.*—Foot and mouth diseases and a few cases of cattle plague reported from Vavoniya.

SOUTHERN PROVINCE.—Maha paddy crop has been harvested in the greater portion of the province and with satisfactory results, vegetables rather scarce. *Stock.*—Foot and mouth disease and a few cases of a form of dysentery reported from Giruwa Pattu of the Hambantota district. (Galle report not published.)

EASTERN PROVINCE.—About 40,000 acres under paddy crop, some in ear, and late sowing will be in ear in a month's time ; prospects good. Indian corn and fine grain unsatisfactory owing to heavy rains when in blossom. *Stock.*—Foot and mouth disease dying out.—(Trincomalee report not received.)

NORTH-WESTERN PROVINCE.—Harvesting of grain crops, dry and wet, with satisfactory results. In some villages in Kalpitiya of Puttalam district paddy crops damaged by elephants.

NORTH-CENTRAL PROVINCE.—Paddy crops are in various stages, most of the tanks full. Fine grain being harvested and satisfactory. *Stock.*—Cattle plague still prevailing.

UVA.—Harvesting of yala crops and sowing of maha ; yield middling in Yatikinda, Veyaluwa, having suffered from rain : rest of the district satisfactory. Fruit and vegetables plentiful except in Bintenne and Udukinda, when it is reported to be scarce. *Stock.*—Foot and mouth disease in Veyaluwa

SABARAGAMUWA.—Maha paddy crops harvested, yield generally good. Yala cultivation going on *Stock.*—Cattle plague reported from Yatatwalla in Kegalle district.

THE NITROGEN QUESTION AGAIN.

The March number of the *Indian Agriculturist* contains a letter from Mr. Bamber (the author of a well-known work on tea cultivation) who claims to have discovered the fact that the *Mimoseæ* as well as the *Papilionaceæ* are capable of fixing the free nitrogen of the atmosphere through the organisms contained in the tubercles found in their roots. Dr. Watt, the reporter on economic products to the Government of India, it is also alleged, claims to have made the same discovery, and the *Indian Agriculturist* decides that the credit is due to Dr. Watt. Both claimants seem to have been led to the discovery by an examination of the roots of the "Sa" tree

(*Albizzia stipulata*), which is planted as shade for tea in Assam. The "Sa" is none other than the "Kabalmara" or "Hulanmara" of Ceylon, which is also here planted for shade owing to its quick growth. It is not uncommon to find disputes arising out of discoveries and inventions. Indeed the discovery of the nitrogen-fixing power of the *Papilionaceæ*, which was made by Hellriegel, was even claimed by, or rather for, a Scotch professor of Botany. The credit, however, will always go to Hellriegel (alas! now no more). We are inclined to think, however, that except where useful for shade purposes, the value of perennial trees as nitrogen-fixers are by no means so important as that of herbaceous annuals or smaller shrubs which can be wholly returned to the soil in the form of green manure, so that the land while gaining in nitrogen will not suffer any loss of the mineral ingredients of plant food. It is strange to find Mr. Bamber saying it was from the discovery of the nitrogen-feeding bacilli in the root tubercles of the "Sa," that Dr. Watt was led to the practical consideration that the cultivation of an herbaceous leguminous plant to be hoed in as green manure, would be advantageous to tea. Accordingly, we are told, the doctor advised the Assam planters to sow and hoe in a crop of "Mati-kalai," or some other of the numerous pulse crops common to the neighbourhood. But "Mati-Kalai" (*Phaseolus aconitifolius*) and all the pulses are papilonaceous leguminoseæ, and the importance of these as nitrogen-fixers has been acknowledged since 1886 when Hellriegel first announced his discovery, and it did not require the further discovery now in dispute to bring out their value for green manuring tea or any other cultivated perennial crop. *Phaseolus aconitifolius* though indigenous to Ceylon apparently has no distinctive native name. The plant is rather a common one, and though not grown here is cultivated on a fairly large scale in India

If as Mr. Bamber claims he was the first to discover and proclaim the fact that he discovered tubercles on the roots of the "Sa" and found bacilli (which, however, he was not able to identify) in these tubercles, then much credit is due him for as it were paving the way for further and fuller investigation of the matter; and, going upon analogy, Mr. Bamber would seem to have had ample justification in inferring that the bacilli in the roots of "Sa" were of the same nature as those associated with the papilionaceæ. But this much is clear, that none of the extracts which Mr. Bamber quotes from his book go to establish his claims to the discovery regarding the mimoseæ.

While referring to this matter of the discovery of a nitrogen-fixing perennial tree, we may state that in his article on the nitrogen question in the *Nineteenth Century* some months ago, Prince Krapotkin mentions that *Elæagnus angustifolia* (a garden shrub nearly allied to the laurel tribe) has also been found to harbour the bacteria that utilize atmospheric nitrogen. The plant belongs to the order Elæagnaceæ, which is represented in Ceylon by E. *Latifolia*, the Sinhalese *Welembilla* or *Katuembilla*. We also know, through the researches of Schlosing and Laurent, that certain of the lower green plants, such as mosses (Bryum, Leptobryum) and Algæ (Conferveæ Oscillariæ, Nitzchia) also absorb nitrogen from the air, but, however interesting all these discoveries may be from a scientific point of view, the agriculturist is most concerned with such quick-growing herbaceous plants as will thrive weed-like on our lands, and grow, without any help on the part of the cultivator, only to be cut down and returned to the soil. Here we may mention the results of independent observations made by a gentleman in Ceylon on the effect of the growth of the "sensitive plant" (*Mimosa pudica*) Sin. Nidikumba, on coconut land. Without any knowledge either of Dr. Watt's or Mr. Bamber's discovery relative to the *Mimoseæ*, this gentleman alleges that he finds coconut palms thriving more luxuriantly wherever this plant, which is generlly considered a pestiferous weed, flourishes. On examining the roots of this *Mimosa* we found an abundance of root tubercles similar to those to be found on most papilionaceous leguminoseæ, and by the same analogy as guided Mr. Bamber's reasoning we are led to infer that these nodules harbour the nitrogen-fixing bacteria. We hope to be able to induce the gentleman referred to above to write an account of his experience with reference to the influence exerted by the sensitive plant on soils, for we consider that the result of his observations are far more important from a practical point of view than those relative to a perennial tree such as *Albizzia stipulata*, for in *Mimosa pudica* we have just such a plant as will suit the purposes of the coconut cultivator, for without requiring any encouragement to grow, such as the cow pea and most papilionaceous crops do, it only demands the judicious use of the knife to check too rank a growth.

OCCASIONAL NOTES.

We would draw special attention to the interesting contribution by Mr. Frank Modder on the Peaty Deposits in the Kurunegala tank. Mr. Modder has already contributed more than one valuable paper to the Ceylon Branch of the Royal Asiatic Society on the topography of the district in which he resides, and has proved himself an enthusiastic student of nature and a careful and thoughtful observer. The specimens of peat forwarded by Mr. Modder are thus reported on by Mr. W. A. de Silva, Instructor in Chemistry at the School of Agriculture.

The following are the percentages of ash found in the specimens of peat from the Kurunegala tank :—

(9)	specimen from Case No.	1	...	6 per cent.
(2)	" " " "	2	...	13 " "
(3)	" " " "	3	...	10 " "

We would also draw attention to an eminently practical paper on Soil Analysis, (to be concluded in our next issue) by F. B. Guthrie, and to the second instalment of Prof. Green's paper on Plant Nutrition.

Dr. Trimen, who has returned in better health to Ceylon, will be welcomed by all who are looking forward to the completion of the learned doctor's *magnum opus*, for it is mainly with this object that Dr. Trimen has come back to the Island. We have also to welcome back Mr. A. F. Broun, the Conservator of Forests, on his return to Ceylon from leave.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF MARCH, 1896.

1	Sunday ..	Nil	19	Thursday ..	Nil
2	Monday ..	Nil	20	Friday ..	Nil
3	Tuesday ..	Nil	21	Saturday ..	Nil
4	Wednesday ..	Nil	22	Sunday ..	Nil
5	Thursday ..	Nil	23	Monday ..	Nil
6	Friday ..	Nil	24	Tuesday ..	Nil
7	Saturday ..	Nil	25	Wednesday ..	·59
8	Sunday ..	Nil	26	Thursday ..	Nil
9	Monday ..	Nil	27	Friday ..	Nil
10	Tuesday ..	·31	28	Saturday ..	Nil
11	Wednesday ..	·04	29	Sunday ..	·09
12	Thursday ..	·47	30	Monday ..	·20
13	Friday ..	2·81	31	Tuesday ..	·09
14	Saturday ..	Nil	1	Wednesday ..	·05
15	Sunday ..	·01			
16	Monday ..	Nil		Total..	4 66
17	Tuesday ..	Nil			
18	Wednesday ..	Nil		Mean..	·15

Greatest amount of rainfall in any 24 hours on the 13th instant, 2·81 inches.

Recorded by J. D. S. Jayawikrama.

THE PEATY DEPOSITS IN THE KURUNEGALA TANK.

Nearly a half of the surface of the Kurunegala Tank, which is about 104 acres in extent, is covered with a mass of floating vegetation, about 6 feet in depth in some places, and of greater depth in other places, possibly identical with what is known in Ireland, as the "Old Widow's Tow." This mass is a veritable eyesore, and completely takes away from the effect, both from a picturesque and a sanitary point of view, of what has not been inappropriately termed "the lungs of the town." Various schemes have been at different times proposed and tried for getting rid of this mass, and many attempts were made to remove it, but with very little success.

In September, 1877, an experiment was made to slice it and float out the detached pieces through a cutting in the S.-W. bund, which was secured by a coffer-dam. Blocks of vegetation 9 feet square and 3 to 4 feet in thickness, and one 6 feet thick, were floated out successfully, but as ill luck would have it, the coffer-dam began to leak, and though every means was employed to check the flow of water, the whole coffer-dam was carried away, a large breach formed where the cutting was made in the bund, and within three hours the tank was empty.

After the bursting of the tank, the floating mass resting on the soft mud at the bottom gave rise to fresh growths with wonderful rapidity, and in the space of six months the area of the tank became a jungle of rushes, and sedges and other bog plants. To clear this jungle away, it was fired during the dry weather and everything was burnt off, except the peaty deposits underneath. As an experiment, the peat was dug and carried out by prison labour, but the progress was so slow, that it was abandoned.

In May, 1878, Mr. Daniel Morris, then Assistant Director of the Royal Botanic Gardens, Peradeniya, was specially deputed by Government to examine and report on the character of the vegetation and suggest means by which it could be removed and the subsequent re-growth prevented. Mr. Morris made the necessary examination and suggested that the peaty deposits be burnt off *in situ*, and advantage be taken of the burning to destroy the roots, stems, and corms of all troublesome weeds; that the mud and silt which could not be burnt be as far as possible removed, and the weeds along the sides and slopes of the tank be carefully taken up before the tank was filled again. In order to prevent the re-growth of the vegetation, Mr. Morris urged that it was most important that a uniform depth of at least 6 feet of water be maintained over the whole area; for when full, the greatest depth, namely near the S.-W. bund is about 9 feet, in a few other places it is 5 to 7 feet deep, but for the most part the tank has a depth of only about 3 to 4 feet even in the wet season; during the dry months the depth of water is still less—conditions so favorable to the growth of aquatic plants. Lastly, he recommended encouraging the growth of water lilies such as *Nymphæa lotus*, and *Nymphæa stellata*, which would tend to check the spread of plants growing on the sides and keep the tank free of noxious weeds.

None of these suggestions were, however, carried out, and with the repair of the bund, and the refilling of the tank, the floating mass resumed its original position, and goes on increasing daily in size.

Being interested especially from a geological point of view, I address you on this subject, and send you three cases of specimens. The floating mass may be divided into three parts. The first is a compact mass, as contained in Case 1, and supports a growth of rank vegetation, specimens of which also as far as I have been able to gather I send you. The *second* consists of fibrous roots only and forms the connectiong link between the crust or the first part, and the *third*, which is composed of slushy matter (seemingly peat in the course of formation) to which it is attached. There is water between this part and the bottom of the tank, with which it is apparently unconnected.

You will see from Case No. 1 that the peaty deposit in the crust is composed of fibrous roots, stems, and partly decayed leaves of grasses, and sedges, and a variety of aquatic plants. When cut vertically the peat appears stratified with each year's growth, and is evidently the result of many years' accumulation. Mr. Morris at the date of his visit could not identify the most important plant which enters largely into the floating mass, as it was not sufficiently grown to enable him to do so. He identified among the grasses, *Panicum myurus*, *Panicum interruptum* and members of the Carex and Cyperus families. The matted growth of these are mixed with *Ceratophyllum*, *Polygonum*, *Zimnophila*, *Marsilea*, and *Utricularia*. During the dry weather most of the grasses and sedges wither down and their dead leaves accumulating around the floating stems, which are at times 20 to 30 feet long, serve to increase periodically the size of the mass and to gather around the fine mud and other deposits brought in by the rains.

Looking at the matter from a point of industrial economy, could the peaty deposits be utilized as fuel? I believe some attempt was made in this direction with the peat found at or in the neighbourhood of Muturajawela town, but with what success as a commercial speculation this deponent knoweth not.

Mr. Morris found the residual ashes obtained by burning the peat, rich in potash and other salts, and mixed with soil, he thought they ought to prove a useful manure for estates and gardens.

Floating masses, identical with that in the Kurunegala tank, are to be met with in some of the other tanks in this district, which it is believed is the only division in the island in which they occur.

FRANK MODDER.

THE MANAGEMENT OF DAIRY CATTLE.

By Mr. James Mollison,

Superintendent of Farms, Bombay Presidency.

(*Concluded.*)

The period of heat or œstrum in a buffalo is of short duration, usually only a few hours. A buffalo should therefore be put to the bull at once when the symptoms of heat are observed. In the case of a buffalo they are unmistakable. At pasture a buffalo in heat will rush all over the field and bellow or rather grunt vigourously.

A cow remains longer in heat, usually about 24 or 30 hours. The cow though also excited does not make so much fuss or noise as the buffalo. The cow is most likely to hold to service if covered when going off heat. Neither cows nor buffaloes should be covered more than twice during the period of heat. A stud bull is a much more certain stock-getter if he is as regularly worked as an ordinary work bullock. He must, however, be liberally fed. If a cow has been covered and does not hold to service, she will, if in thriving condition, come in season again in 21 days. Buffaloes may come in season every three weeks, but often a much longer period elapses between periods of œstrum. If a cow is healthy, she will not come into heat when pregnant. The other signs of pregnancy are—the belly enlarges particularly on the right side, and about the sixth month the calf can be felt as a hard lump near the flank on the right side. The calf can be seen even earlier than this to jump especially when the cow drinks cold water.

One attendant is required to feed, attend to and milk 8 to 10 cows. Each animal should be milked always by the same man. At milking time the stalls should be clean. The milkman should wash each udder and dry it with a cloth immediately before milking. This is specially necessary with buffaloes which when excited urinate in small driblets, which run down the thigh on to the udder and drop from the teats. The milker's hands should also be washed clean. It is almost needless to add that the milk vessel used must also be clean. Milking should be done expeditiously and the last drop of milk extracted. The calf usually is accountable for the thoroughness of the latter operation. It is common in dairy farms, where no calves are suckled, to go over the cows a second time and draw away the last milk, which is called "strippings." This, as already noted, is the richest part of the milk and is usually set aside in farmers' households to answer the purposes of cream. Any milk left in the udder-der does not tend to increase the yield at next time of milking but rather to set up local inflammation.

The milk is easily tainted by the food given to the animals. Buffaloes are indelicate feeders, and with good reason their milk is often objected to on this score. Any plant with a pungent aromatic odour is apt to taint milk. Turpentine given as medicine will taint milk secreted during the following 24 hours, so much so that the milk is quite undrinkable. The drinking water of cows, if polluted with sewage or with decaying organic matter, whether animal or vegetable, may be the cause of tainting the milk, so that it becomes dangerous as human food. Every contagious disease has its own germ, and milk at any ordinary temperature is perhaps the best medium in which these germs may be propagated. Disease in the human subject has been repeatedly traced to impure milk. How far enteric fever, cholera, diphtheria and many other diseases, can be communicated through milk may be conjectured. There is no question that unsanitary conditions surrounding cow-sheds and dairy premises furnish a public danger of no common order. A simple test to determine whether organic matter is present in water, is accomplished by evaporation and by burning the residue in an open vessel; if the smell peculiar to burning organic matter is given off the water is unwholesome. Nitrates or common salt present in drinking water indicate contamination by sewage, the salt being an indication that the contamination is due to human urine.

Cow-sheds in India should be airy, well ventilated, have *pucka* floors and open gutters or drains to carry the urine directly to the manure pit. The byres should be situate on a high well-drained situation. Cows should not stand crowded in the stalls.

PADDY PESTS.

Leucania loreyi.—Specimens of this Noctuid moth were received at the Indian Museum in 1888 with the report that it had done considerable damage in the larval stage to the rice crop in the Central Provinces of India. The insect is allied to the "Cut-worms." Several other species of Lepidopterons pests of rice have from time to time been reported, but as yet the knowledge with regard to them is very incomplete. One form which is said to attack the rice crop in Burmah is described by Mr. Wood-Mason as *Paraponyx oryzalis*; and the "wolf moth" (*Tinea granella*) has been known to have on several occasions done great damage to cargoes of rice shipped from Calcutta to London, while lying in Kingston, Jamaica

Suastus gremius is said to be destructive while in the larval stage to rice,—feeding on the young, tender leaves. Though the damage is not considered very great, its destruction is recommended by raising the bunds or dams of affected paddy fields and submerging the crop under water for a time.

Hieroglyphus furcifer and *Euprepocnemis bramina.*—These are orthopterous insects, and ar

reported to have done considerable damage to young paddy and small millet crops in Central India.

Lachnosterna impressa.—Dr. Watt mentions that the larva of this species, or of a beetle very closely allied to it, attacks the roots of rice and Indian corn in Chittagong, emerging from the ground in July and August. Paddy kept covered with water during these months is said to be unaffected.

Cecidomyia oryzæ. This insect, which is of special interest as belonging to the same genus as the destructive "Hessian Fly" of Europe and America, was described and named by Mr. Wood-Mason about ten years ago; but though it is said to have played great havoc among the paddy crops in some parts of India, it does not appear to have been heard of since.

THE PRESERVING OF FRUIT.

There is much that has been written about fruit cultivation in Ceylon and the capabilities of certain districts in the Island to produce good fruit in abundance. But though the required conditions of soil and climate may exist, it is a noteworthy fact that fruit culture has not made much if any progress with us. Large native capitalists will continue to invest all their capital in coconut cultivation as long as coconuts continue to give anything like the returns they do at present. It is only among the comparatively poorer classes that any attention is given to fruits as a source of revenue; the produce coming from more or less scattered clumps of fruit trees found in the villages. It is true enough that fruits fetch good prices in town markets, but these prices may be expected to be appreciably diminished as soon as the out-put is increased when the systematic cultivation of fruits is taken in hand. It is no doubt from an apprehension of this latter fact as well as owing to the perishable nature of our succulent fruits which require a ready market, that fruit cultivation is not being extended. Some fruits can no doubt be packed for transport without suffering deterioration. Oranges and lemons after undergoing what is known as "curing" can be carried long distances without spoiling, and even grapes come all the way from Australia in fair condition. But it is doubtful whether such succulent fruits as the mango and pine-apple or even the plaintain will remain good through a long voyage. One solution of the difficulty of disposing of fruits produced on a large scale is undoubtedly to adopt the system of preserving them by canning. If the fruit canning industry can possibly be started in Ceylon it will give life and energy to fruit cultivation in the Island. That there will be a demand for canned topical fruit may be reasonably anticipated. Fruits properly canned will "keep" for an indefinite period in any climate, and canned fruit, more nearly than that preserved by any other method, resembles in flavour and texture the natural article. "Nothing," says Prof. Shelton, "is truer than this,—that the demand for fruits—preserved and green—can be almost indefinitely increased. The appetite grows on what it feeds." And again, "The canning of fruit is not alone work for the factory or capitalist . . . it is one of the 'home industries' that is within easy reach of every adult person of ordinary intelligence. There is nothing occult, mysterious, or difficult in the work. It requires no more skill or greater knowledge than is employed in making a good article of bread or butter."

It is as well to have a thorough understanding of the object with which canning is carried out, and this is well explained in the following paragraph:—The work of placing fruit in airtight cans, bottles or jars, and then subjecting them to heat, and the final sealing of the jars, have no other object than to exclude the germs of fermentation. The sugar employed in making the syrup has nothing whatever to do with the preservation of the fruit. Much or little sugar, or none at all, may be used in the process to suit the taste. These germs require certain conditions of temperature, moisture and food supplies. When we dry fruit by means of an evaporator or drier we prevent the action of the germs by depriving them of the necessary moisture; in freezing meats the temperature is made too low for their existence, and in canning we by the aid of heat drive out the germs of fermentation and keep them out by hermetically sealing the jars.

It has been found by experience that the germs of fermentation cannot find their way through a mass of fluffy cotton, and the plan is sometimes adopted, after cooking and seasoning the fruit as in the ordinary process of canning, to close up the vessel with a close-fitting plug of cotton wool which should be secured on the outside of the neck of the bottle or jar, and covered with a wrap of paper. This will, however, only do where the preserved fruit is for home consumption.

Further details on canning, as given by Prof. Shelton in his bulletin on the subject, will follow.

W. A. D. S.

SOIL ANALYSIS.

BY F. B. GUTHRIE.

(*Agricultural Gazette of N. S. Wales.*)

The analysis of soils constitutes a large part of the routine work of the chemical branch of the New South Wales department of Agriculture, the number of complete analyses of different soils made during the four years of its existence being about 350, exclusive of a large number of which only a partial examination was made. Concerning the value of soil analysis to farmers, I am aware that there is considerable difference of opinion, some excellent authorities denying its value altogether, whilst there are not wanting those who go to the other extreme, and expect a chemical analysis to indicate both the nature and the exact quantity of fertiliser which is required to make the soil productive.

In this as in most other debatable matters, I believe that the truth lies somewhere between the two extremes, and that a great deal can be learnt as to the proper treatment required from a rational system of analysis, which shall take into account the nature of the operations going on within the soil as well as its percentage composition.

That soil analysis, rationally conducted, has a considerable economic value I am convinced, and this conviction is strengthened by the continually increasing number of soils sent in for report from all parts of the Colony, by the number already

done, and, unfortunately also by the arrears which accumulate.

Those who deny any value to soil analysis found their objections upon the means at present at our disposal in the laboratory of reproducing the natural condition of affairs going on within the soil; in other words, they argue that we cannot say what quantity of any given ingredient is in a condition in which it can be assimilated by the plant.

Let us hear what M. Ville says on the subject: "Chemistry is powerless to throw light upon the agricultural qualities of the soil, its resources and its needs, because it confounds in its indications the active assimilable agents with the assimilable agents in reserve, the active with the inert and neutral principles."

This is the conclusion he arrives at from the discussion of analyses which give the percentage composition of the soil together with the so-called mechanical analyses, the proportions of sand, clay, gravel, &c. M. Ville further points out that extraction with water yields results no less unsatisfactory, since the plant is able to utilise soil material which is insoluble in water.

In order to remedy this evil, the existence of which I suppose no one will be hardy enough to deny, various methods have been suggested and tried with the object of attacking the soil in a manner representing as nearly as possible the actual conditions which prevail in a field under cultivation. A few such reagents may be mentioned; they include water saturated with carbonic acid, oxygenated water, acetic acid, citric acid, and different salts, such as ammonium citrate.

In a recent series of researches Dr. Bernard Dyer* has experimented with a 1 per cent solution of citric acid, which appears to approach closely, in its action upon the soil, the solvent power exerted by the acid secreted by the roots of certain plants. I venture to think that, notwithstanding the great scientific value of such a line of investigation, and of the light it may be expected to throw upon many obscure functions of plant-life, it leaves us pretty much where we were it we attempt to base upon its use any practical advice to the farmer as to the nature of the manures or other treatment his soils requires.

I am prepared to go a step further than M. Ville, and to say not that we are unable to reproduce the agents at work within the soil in supplying the plant with food, but that we should gain very little from an economic point of view if we were possessed of them.

For, let us assume that the "universal solvent" has been found, that we are possessed of a reagent which exercises the same solvent action on the soil as, let us say, a wheat crop; in other words, one that dissolves from the soil the same amount of mineral and nitrogenous matter as the wheat crop will extract during the period of its growth. We are met with the following difficulties:—

Our wheat crop, though it contains less nitrogen (say, one-third less) than a crop of turnips, will nevertheless benefit very much more than the latter by an application of nitrogenous manure; that is to say, the wheat crop cannot make the same use of the nitrogen in the soil as the turnip does—exercises, in fact, a different solvent action upon the nitrogenous constituents.

* Journal of the Chemical Society, March, 1894.

Or, since the nitrogen in the soil is continually changing its condition, and there are external sources of nitrogen which may have some bearing in the above instance, we may take a case which is even less ambiguous.

The mangel crop removes from the soil nearly double as much phosphoric acid as the turnip crop does; nevertheless, manuring with superphosphate is of less benefit in the case of mangels than with turnips, the recognised reason being that mangels are able to utilise the phosphoric acid, as it exists in the soil, to a greater extent than turnips. So that it will be necessary for us to devise one solvent for turnips and another for mangels, one for phosphoric acid and one for potash—a separate set of solvents for every crop; and such a scheme, if it were feasible, would be far too cumbersome for practical purposes.

A second objection lies in the fact that the agencies at work within the soil are unceasing, and, as a consequence, the combinations in which the nitrogen and mineral matter exists are also constantly changing. What is true of the chemical constitution of the soil today is no guide as to its constitution a week hence.

The determination, especially of the quantities of nitrates, of ammonium compounds, and of "organic" nitrogen, provides us with no information to the purpose, for these, of all soil constituents, are most rapid in their changes.

Further difficulties present themselves in the large quantities of soil which it is necessary to employ in the determination of the substances soluble in water and weak acids, and the consequent length of time required for each determination, and also in the initial difficulty which presents itself in all soil analysis of ensuring the proper selection of a sample which shall represent anything but itself.

This difficulty, which is felt in all attempts to judge of the character of a soil from a given sample, applies more particularly to a chemical analysis, and increases in proportion as the quantities of the estimated substances diminish.

A chemical analysis alone, therefore, is of little value in guiding the farmer as to the requirements of his soil, and it is not in the refinement of chemical methods that we may look for help in this direction. We shall, I believe, obtain much more valuable information if we can ascertain the conditions under which the fertility of the soil is maintained.

The fertility of a soil depends in the first place upon the presence of a sufficiency of plant food, and secondly upon certain properties, possessed more or less by all soils, which effect the splitting up of the mineral ingredients in such a manner as to render them available to plants, as well as regulating the supply of water, air, warmth, &c.

We shall discuss the most important of these properties, and shall find, I think, that they are capable of identification in the laboratory. A large number of those properties conducive to fertility are dependent upon the porosity of the soil—in other words, its fineness of texture.

(To be concluded in next issue.)

HOUSEHOLD HINTS.

Some of the most beautiful grasses and ferns for home decoration may be made as follows:—Place a small saucepan partly filled with water on

the stove, add to the water enough alum to make it of sufficient density to bear an egg, and let it boil. Then remove the saucepan, and place the grasses, which should be already bunched, in the water. When the water is cold lift them out, and they will have become a mass of beautiful crystal. For decorative purposes the beauty of dried grasses and ferns is greatly enhanced by this process.

A Japanese furniture polish, said to be exceptionally valuable for its purpose, is prepared by mixing well together one pint of linseed oil, one pint of strong cold tea, the whites of two eggs and two ounces of spirits of salt. When thoroughly combined pour into a bottle, which must be shaken each time before the polish is used. Make a pad of soft linen, pour on a few drops of liquid, rub well over the article to be polished, and finish the process with an old silk handkerchief or dry chamois skin. The Japanese use their fine paper, both as polisher and first applier.

Some very cooling summer drinks for use in health or disease may be made as follows:—Cut a lemon in slices, put in a jug, add a heaped teaspoonful of sugar, and fill up with boiling water, let it stand until cool, then strain and place on ice until wanted. Or, peel and slice an apple, add a small slip of lemon-peel and three lumps of sugar, pour on boiling water, and strain. In fevers the latter drink is very refreshing.

To take ink out of linen dip the spotted parts immediately in pure melted tallow; then wash out the tallow and the ink will have disappeared.

To make green tomato pickle, take 1 gallon green fruit gathered on a dry day, wipe them to remove any grit, and remove the outer skin with a sharp knife, slicing them when peeled. Take 1 tablespoonful of salt, 1 oz. peppercorns, 2½ tablespoonfuls of mustard seed, 1 ditto of powdered cinnamon, 1 tablespoonful black pepper, 2 ditto cloves, 1 teaspoonful of cayenne, 1 lb. brown sugar, and 3 pints of vinegar. Divide the spices into three, and place in three small muslin bags. Take half the vinegar, boiling it and the spices together with the sugar, pepper, mustard, &c., for half-an-hour. Get jars ready, and first put in a third of the sliced tomatoes at the bottom of the jar, then a spice bag, and pour some boiling vinegar, &c., over them; repeat same process till the jars are nearly full, finally adding the cold vinegar to fill up with. Seal the jars securely, and put away.

Evergreens and flowers may be preserved by the following simple process:—Immerse them in a solution of gum arabic and water two or three times, allowing sufficient time between each immersion as will allow them to get dry. As the result of this dipping the specimens are preserved from the air by a thin coating of gum, which prevents their decay.

Roup is one of the most dreaded diseases in chickens we have to fight against. Much has been said and written on this subject, and there are hundreds of remedies on the market guaranteeing a cure, but many of the guarantees prove false, because the disease has gained such a hold before the remedy is applied that it is impossible to effect a cure. For mild cases of roup I give the bird half a teaspoonful of camphor and put a little in the drinking water, and by giving the patients good warm quarters and good feed for a few days they are soon over it.

THE NUTRITIVE PROCESS IN PLANTS.

(Professor J. Reynolds Green, D.Sc., F.R.S.)
(*Continued.*)

When we consider the conditions of life of the plant with the irregular intervals of feeding which they necessarily involve, we see that the organism not only absorbs material for immediate use, but—taking in a far larger amount than the exigencies of the moment demand—accumulates a reserve store on which it can subsist during the periods, short or prolonged, when no absorption is possible.

We may view the matter from a slightly different standpoint and yet come to the same conclusion. The processes of absorption in a plant depend to a far larger degree than in the animal upon purely or almost entirely physical conditions. Given a certain amount of carbon dioxide in the air, and a certain amount of water in the plant, to which that air has access, and the carbon dioxide will be dissolved according to the power of the water to dissolve it, or—putting it more technically—according to its co-efficient of solubility. In the presence of the chlorophyll, the green colouring matter of plants, with the access of sunlight other changes supervene which lead to the continuation of the process of absorption of the gas. Similarly with the root and its relations to the soil, the process of absorption of water with its dissolved substances will proceed so long as certain physical conditions obtain. Thus the plant is on the whole rather passive than active in the initial stages of its own feeding, exercising no inhibitory power such as that attendant in the animal on a failure or cessation of appetite. Again we are led to the fact that when the absorption of food in a plant is proceeding, the probabilities are decidedly in favour of such absorption being much greater than the immediate need for direct consumption; and thus that the excess must either be got rid of wastefully, or be stored in some advantageous form for consumption later on, when absorption shall be suspended.

It must be noticed, however, that these reserve materials are not a simple accumulation of food pabulum in the form in which it is of immediate use. Granted that the plant in the first instance forms certain bodies on which its living substance draws at the place where it is originally constructed, then, so long as the immediate needs are in excess of the amount prepared, it follows that there will be no overflow from that spot; it will be at once utilised by the living substance in the processes of nutrition and growth. But if there should be a greater amount formed than can be immediately used, it is not simply retained unchanged in the cell, nor does it overflow unchanged to contiguous cells where demand exceeds supply, or where provision is made for temporary storage. The storage forms are different from, and more complex than, the originally prepared ones, and more energy has to be expended on them, either where they are made or in the place of storage itself. When, therefore, they come to be utilised in after time, they are necessarily made to undergo a

process of digestion comparable in its broad lines to the process which awaits them after they are eaten by an animal. In other words, a plant when living on its reserve materials is almost strictly comparable to an herbivorous animal, both as regards the substance of its food and its manner of making it available for nutrition.

The importance of the reserve materials of plants is therefore two-fold. In the first place it is at their expense that many of our agricultural plants fulfil their ultimate duty of preparing flowers, fruits, and seeds. If we consider the case of a carrot, we find that it does not enter upon this task during the first year of its life. Its constructive processes are then at their best, and a large amount of reserve material is provided by its leaves and stored away in its bulky fleshy root. During the second year, the constructive activity is much less; it developes however its fruit and seeds, exhausting as it does so the store which the root then contains. The same process is seen, though in a slightly different way, in the development of the seed itself. Though the parent plant often does not survive the production of seeds, it finishes its own life work by providing its young embryo or embryos with a store of nutritive material, which enables it or them to make a start on their own account; depositing this either in the embryo itself, as in the pea or bean or in its immediately surrounding tissue, the endosperm, as in the buckwheat, oat, carrot, or other similarly constructed seed.

In the second place these reserve materials are of the utmost importance, not so much to the plant as to its cultivator, constituting as they do the valuable part of most of our harvested crops, providing us with the material on which animal life is immediately dependent. Thus the seeds of cereals, the tubers of potatoes and artichokes, the roots of beat, carrots, turnips, &c., the inflorescences of cauliflowers, the bulbs of onions, &c., are of value commercially according to the nature of the materials the plants have deposited in them and the condition in which they exist when we call the particular member of the plant *ripe*.

A further division of the food materials of the plant still may be made. The reserve materials we have seen may be destined for almost immediate use, or may be intended to be deposited for months or even years in some special receptacle such as root, stem or seed. In the first case the form they take is not quite so complex as in the second; there is no need for the preparation of such an elaborate product. We get thus a certain class of material which is intended for circulation or short transport; these may be considered as circulating reserves, drawn upon immediately by the growing cells, situated perhaps not far from the seat of original formation. These usually are soluble products, and can only be detected in the fluid or sap which passes from cell to cell. As, however, the local, like the general, demand varies much in amount from time to time, we find a sudden cessation or diminution of it marked by temporary deposits, small in quantity, which usually remain a very short time where they are laid down. In the young shoots, and even in the leaves themselves, we frequently, if not generally, find quantities of starch grains present in definite cells or layers of cells. Sometimes these are present, sometimes they are not: in the leaves, for instance, after a bright day, we find a quantity of starch, which, however, disappears during the succeeding night. This store of starch may be for the use of the leaf tissue should the process of manufacture be checked by the failure of sunlight, or it may be transported to more permanent reservoirs, to be again stored up.

This store of circulating material can thus be distinguished from the more permanent store which we generally associate with the term reserve material, and which we have seen is deposited in parts where active metabolism is not the leading feature of the tissue.

RHEA FIBRE.

We take the following account, which gives some interesting details of rhea cultivation, from the *Sugar Journal.* The information that the leaves of the ramie plant are very nutritious fodder and are eagerly eaten by cattle, is new to us. In spite of the facilities afforded for procuring cuttings from the trees (imported as plants from Calcutta) established at the School of Agriculture, and the facilities to locally dispose of the raw dried bark, no one has been enterprising enough to give rhea a fair trial in the island :—

We have to thank the Department of Agriculture for the following letter received by the Secretary to the Queensland Agent-General, from the Managing Director of the Boyle Fibre Syndicate, 2, Victoria Mansions, Westminster, London :—

There is no difficulty in either the decortication or degumming of the ramie plant, and if the farmers can be induced to grow it, a good paying profit per acre can be obtained. In the Straits Settlements, where there is no winter, and scarcely any variation of temperature during the year, daily cuttings of the stems can be made, and the machinery consequently kept at work during the whole year; 300 lb. of sticks will produce 12 lb. of white degummed filasse; this is the daily product of one acre of land, say $1\frac{1}{2}$ tons per year, reckoning 300 working days. I am not aware whether or not there is any part of Queensland where ramie can be grown under climatic such conditions as in the Straits. The climate there is a moist one, with an average rainfall of 120 in, but at all events on irrigated land $1\frac{1}{4}$ to $1\frac{1}{2}$ tons can be relied upon if the soil is good. The ramie plant, as you are aware, is perennial, and requires no cultivation, and after the plant has reached 3 ft no weeding is necessary; it destroys every other weed, and all the farmer has to do is to cut the stems as they mature; the root will last 20 to 30 years and only requires thinning. The surplus plant can be used for extending the plantation or sold to other planters. A properly grown stem without leaves will weigh about 4oz, so that the daily product of one acre will be about 1,200 stems. One man could therefore look after five acres working 10 hours per day, this would mean cutting 10 stems per minute, but kanaka labor would probably produce less. The labor of cutting is very suitable for boys and women, as it is light.

Twenty-five acres would bring a return of about £15 per week to the farmer, out of which he would have to pay wages and carriage of the stems to the mill. The stems to be delivered every day from a 25-acre patch would weigh approximately about $3\frac{1}{2}$ tons, without leaves, so that it is neces-

sary to have the mill in a central position as near to the growers as possible; it is also of greatest importance that the mill should be erected on the banks of a river where water can be obtained the whole year round, and that easy access can be obtained to a railway or navigable river.

The leaves of the ramie plant are very nutritious, and are eagerly eaten by cattle, and as a 25-acre patch will produce about $1\frac{1}{2}$ tons per day of leaves and the sweet tops of the stems, this will form an additional source of income to the farmer as cattle food, the manure being used on the land.

If a guarantee could be given that 500 acres would be put under cultivation and the product supplied to the mill, my Company would be disposed to put up the mill and the necessary machinery, and pay the farmers at the rate of 2d per lb for every lb of white degummed filasse produced from the stems supplied by them, or so much per ton for the stems supplied after we have tested the amount of fibre produced, which would be about 4 per cent of the weight of the green stems.

Department of Agriculture,
Brisbane, January 16th, 1896.

Correspondence.

To the Editor, "Agricultural Magazine."

Dombowinne Estate,
Mirigama, 18th March, 1896.

Sir,—In that very valuable work "Ceylon Manual of Chemical Analyses," Mr. Cochran gives a large number of tables. They are all of importance to agriculturists in the Island.

To complete those of the third chapter devoted to the "products of the coconut plan," there are wanting the following tables of analysis:—

1.—Of the husk of the coconut.
2.—Of the shell.
3.—Of the reticula.
4.—Of the various parts of the frond.
5.—Of the various parts of the flower, and
6.—Of the various parts of the trunk (bark, root, wood, sago).

I write this in the hope that the learned author will publish a supplement containing the information desiderated, together with other matters of usefulness.

Mrs. Jules Lepine's table quoted in page 44 needs confirmation, because many other things of which he treats in the same connexion are erroneous within my knowing. See page 57 of "All about the Coconut Palm" where some of his errors are shewn up. As a rule sugar, gum and fatty matter ought to be shewn distinct from each other.

In "All about the Coconut Palm," I find the following statement:—

"One great difference exists between the coconut tree and such trees as the mango; for, whereas in the latter, there is bark surrounding the wood, in the former there is none. Indeed, the whole trunk of the coconut tree appears to be tolerably well adapted for carrying on all the functions of life. On one hand you see fruit-bearing trees, of which, for some feet high, almost the entire trunk has been destroyed, so as to leave a mere shell, barely sufficient to support the tree; on the other hand, the outside of the tree is destroyed so as to leave merely a central column; from which it would appear, that all parts of the trunk indiscriminately are capable of discharging all the necessary functions of life." (pp. 72-73). Is this so? I have seen barkless coconut trees invariably die in 4 or 5 years. How is this accounted for?

I subjoin an article from the Fiji *Argus* as found in page 171 of "All about the Coconut Palm." I know of only one planter in Ceylon who limits the number of trees to something like 40 trees per acre to the intense amusement of his neighbours. But his produce, instead of being 72 sound nuts, varies from 200 to 800 per tree per annum without a single unsound nut being found amongst the whole. He counts 36 bunches in the year per tree, instead of 25. Will the ordinary cocalist believe this?

Yours truly,
Cocoapalmist.

"COCONUT CULTIVATION IN FIJI."

"A great amount of nonsense was spoken at a recent meeting here about coconuts, and this nonsense has gone forth to the world under the endorsement of the aforesaid Fiji notables.

I desire now, as a coconut planter, to give you the result, so far of my experience. Thirty-five feet apart is the smallest space that should be allowed to coconut trees, and this will give about thirty-five trees to the acre; apple trees in Canada are planted forty feet apart. A coconut tree under ordinary fair circumstances will throw out a flower bunch or spathe every fortnight, say twenty-five in the year. Of these one-third will be abortive and barren, the other two-thirds, say in round numbers, eighteen will produce on an average on a one-acre plantation four nuts to the bunch, making the yield of each tree in the year seventy-two sound nuts fit for copra—many nuts are infected, and I am sure I am giving the full yield under ordinary circumstances, of a healthy cocoanut tree, one of many thousands growing together. A coconut, from the flower to the ripe nut, takes nearly twelve months before it drops, and if sound and well formed, will give half a pound of copra, equal to thirty-six pounds of copra to each tree, or something over half a ton to the acre, and under the present labour regulations, added to the heavy charges on planting, in other ways, copra at present costs the planter not less than £5 a ton to make, which amount leaves but a small margin, if any, to meet failures in the crops at any time arising from hurricanes or other causes"

"A Planter."

GENERAL ITEMS.

The following, sent by a correspondent to the *Cape Agricultural Journal*, contains goodnews for those whose crops are sometimes ravaged by locusts. In certain parts of the Sabaragamuwa Province—as in the Kolonna Korale—locusts have been known to do great damage:—

As in every paper I look at I see accounts of the destruction done to crops in some district or other by locusts, I wish, through the medium of the *Agricultural Journal*, to let other farmers know how I have so far succeeded in saving my crops.

I got a strong fishing line 150 yards long (the width of my oat hay lands,) to which I tied white rags about every five yards, and had this drawn along the tops of the forage by two men, one at each end of the line. It was wonderful how soon I cleared the land of locusts ; the oftener the operation is repeated the better. For very long lands I would suggest more than one line drawn by men on horseback, and perhaps different coloured rags would be better.

As the saying is, " I am not out of the bush yet," but having mastered two large swarms, I have every hopes of reaping my Oathay and Mealie crops. Hoping that my remedy may be the means of other crops being saved. West H. Fynn.

Redlands, January 8th.

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A French agriculturist has discovered a very simple method of protecting all kinds of grain from the ravages of mice. He states that a few sprigs of wild mint in full leaf, placed at the top and bottom of each sack, will effectually prevent the little rodents from attacking it, as they seem to entertain an invincible antipathy to its odour. He adds that he finds the herb equally beneficial for safe-guarding his cheese dairy. Wild mint also possesses antiseptic properties.

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Artificial camphor, says *Food and Sanitation* may be made by passing a current of dry hydrochloric acid gas through spirits of turpentine cooled from a freezing mixture. The liquid darkens and deposits crystals, which are dissolved in alcohol and precipitated by water. The separated crystals are then drained and dried.

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Last year several planters made inquiries about refuse tea-seed and its value as a manure, and asked if its oil could be extracted profitably and was in any way superior to other well-known fixed oils. Mr. Hooper made a complete analysis of some seeds from a Nilgiri tea estate, and found in them 22·9 per cent of fixed oil, 9·1 per cent of saponin, 8·5 per cent of albuminoids, besides the ordinary constituents of plants. He concluded from the analysis that the seed would not be suitable for manufacturing an oil, as the proportion of oil was much smaller than that found in such well-known products as sesame, coconut, and castor, and the expressed oil would always contain some of the bitter and acrid saponin, which would render it very objectionable. The seed might be used as manure or as an insecticide, as saponin is a poison and a strong decoction of the bruised seeds might kill many of the insectts that infest cultivated tea-bushes.

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Mr. Lawson's report contains some interesting notes on the progress of the medicinal drug cultures in his district. The Botanical Gardens in the Nilgiris supply the Madras Medical Department with all the jalap required by it. A planter who has succeeded in growing Ipecacuanha under light artificial shade, and 20 lb. of dried root obtained from the plants sent to London were sold by auction for 5s 4d per lb. Messrs. S. Figgis & Co., the brokers, described it as " very fine picked root of nice colour," while as a matter of fact it was not picked at all.

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Mr. David Hooper has been carrying on some experiments in the distillating camphor leaves. The following from Mr. Hooper's report is certainly complimentary to the planting community of this Island . " Another reason that encouraged me to make some experiments in this direction was the hearty manner in which some energetic planters of Ceylon have taken up the camphor question." In conclusion, Mr. Hooper says it is interesting to know that a large proportion of camphor can be obtained from the oil of the leaves and from the leaves themselves, and that probably if taken from trees grown at a much lower elevation (than Ootacamund), a much larger proportion of this useful substance could be collected.